



Wirtgen

# TECHNOLOGY

WINTER 2002

## SPECIAL REPORT: Foamed Asphalt From Coast-To-Coast

Wirtgen, Hamm And  
Pro Pav On Same Job



Published by Wirtgen America, Inc.

# RALLY FOR ROADS!

The nation's roadbuilders and their allies are pondering how they will provide the roads and highways the nation will need to maintain its economy and help fight the new War on Terrorism.

Now more than ever, we need to keep our highways and bridges secure, intact and in good working order. When air traffic was halted for days after 9/11, roads and highways came through for Americans.

And for Thanksgiving 2001, the American Automobile Association forecast auto travelers to represent 87 percent of holiday travelers, the highest percentage ever recorded by AAA, compared to 83 percent by car in 2000. A 27 percent drop in air, train or bus passengers was predicted.

During the Great Depression, roadbuilding did not suffer badly because of the great federal public works programs enacted in that era. And later, as the economy recovered, state coffers began to fill again and maintenance work improved.

But World War II was a period of famine for roadbuilders. As total war unfolded overseas, needed employees fought in distant lands, and petroleum products and cement were diverted to the war effort. Road equipment manufacturers turned their plants over to making weapons or construction equipment bound for overseas duty, and citizens forewent unnecessary travel in light of urgent military needs and rationed gasoline.

American civilization basked in the glow of victory, and roadwork resumed in fits and starts to catch up with the explosion in auto use that the new prosperity was bringing.

But then Americans were shaken as the Korean War erupted and the threat of a new mortal enemy — world communism — loomed at their doorstep. Roadwork was curtailed again, and under the demands of skyrocketing traffic and wartime needs, highway infrastructure deteriorated to the point that economic damage was done.

After Korea, Ike made sure that the creation of our National System of Interstate and Defense Highways became a reality (1956), and the system since has been renamed in his honor.

## **Transportation Infrastructure Vulnerable**

But in this new war, which is being fought on U.S. soil, the national transportation infrastructure has become a target in itself. At a National Transportation Security Summit Oct. 31, U.S. Transportation Secretary Norm Mineta said "America is a fundamentally different place from the one that awoke on Sept. 11. We must re-think the basic approach with which we provide for the safety and security of everyone traveling on America's transportation systems."

In addition to a long-overdue crackdown on aviation security screening failures, Mineta outlined

- Creation of a National Infrastructure Security Committee to identify critical transportation assets and protection strategies for all modes
- Introduction of legislation to create a Transportation Security Administration within the U.S. DOT to spearhead security for all modes of transportation; and
- Increased security requirements to address the problem of undeclared or hidden shipments of hazardous materials.

And within the week, the first warnings were issued by Gov. Gray Davis on potential terrorist threats to major California bridges in San Francisco, L.A. and San Diego. Traffic on the Golden Gate Bridge was down 7 percent the first day.

## **Fighting For Highways**

Now the highway industry must make sure the benefits of road construction are heard in the national debate about how to allocate resources as the economy struggles and the war unfolds.

This fall the industry fought to make sure highway spending would become a part of the post-9/11 economic stimulus package being crafted in Congress in mid-October. States demonstrated they were ready, with over \$14 billion in 2,200 projects ready to go on short notice, reported the American Association of State Highway & Transportation Officials (AASHTO).

The survey found that state DOTs, working with their partners in local government and the private sector, can provide an immediate stimulus to the economy by creating thousands of jobs while addressing high-priority infrastructure needs.

Every \$1 billion of increased investment in highway infrastructure generates 42,000 jobs, according to the Federal Highway Administration. Estimates are that 75,000 jobs would be created within 12 months of enactment, and an additional 100,000 during the year to follow. The remaining jobs would occur within the next three years.

Lobbying groups like the American Road & Transportation Builders Association, American Highway Users Alliance, Associated General Contractors, Construction Industry Manufacturers Association and U.S. Chamber of Commerce lobbied in the trenches.

And educational groups like The Road Information Program (TRIP) provided information to newspapers across the country that demonstrated, for example, that a \$5 billion boost in highway spending nationally would provide more than \$166 million for highway projects in Illinois alone. In turn, that money would create 7,000 jobs over the next two years. And many of those jobs could be started in the next few months.

## **Let's Rally For Roads**

It will be a long time before air traffic rises to pre-9/11 levels. With gas prices continued low, as Americans gain confidence and get used to life in wartime, they are going to drive more and more to get where they're going. Moreover, the elements are in place and the foundation is secure for an economic recovery in 2002, perhaps sooner than later.

All of this means even more demands and more loads on our highway infrastructure. To meet those demands, in these troubled times, let's "rally for roads" ... for the economy's sake ... for our nation's security ... and for our domestic tranquility.





# Wirtgen TECHNOLOGY

WINTER 2002

## Contents

### Feature Articles



6

**Maine Application Gives New England Glimpse Of Foamed Asphalt**

6

**Foamed Asphalt Fights Louisiana Pavement Cracking**

8



10

**Expanded Asphalt Right Choice For Scenic Park**

10

**Caltrans Gets Look At Foamed Asphalt Base Recycling**

12



15

**Colorado Contractor Builds Future Stabilizing Bases**

15

**Two W 2200s Mill Enormous Quantities On Illinois Interstate**

17

**W 2200 Lets Alabama Contractor Enter Bigger Markets**

19



19

**New Pro Pav Line Merges Best Features Of Euro, U.S. Designs**

21

**Wirtgen, Hamm And Pro Pav Join For I-40 Rebuild**

25



25

**Contractors Affirm "Old 1900s Never Die"**

27

**Hamm Compactor Does Work Of Two At Midway Airport**

31

**All-Wirtgen Rhino Teeth Give Alpha Competitive Edge**

33

Wirtgen Technology Magazine, Winter 2002, Vol. 2, No. 2. Wirtgen Technology is published in the United States of America by Wirtgen America Inc., a subsidiary of Wirtgen GmbH. Portions of this magazine may have appeared in other publications. Copyright © 2001 by Wirtgen America Inc. All rights reserved. Contents of this magazine may not be reproduced in whole or in part without prior permission of the copyright owner. For permission or more information, or to address communications, please contact Connie Murray, Manager, Sales Administration, Wirtgen America Inc., 6030 Dana Way, Nashville, TN., 37013, voice (615) 501-0600, fax (615) 501-0691, e-mail connie@mirtgenamerica.com. Concept, photography and copy by ExpresswaysOnline.com, Wheeling, Ill., <http://www.expresswaysonline.com/>.

**On the Cover:** Foamed, or expanded, asphalt base is created on Trans-Canada Highway in Ontario. Thanks to Roto-Mill Services Ltd. for its assistance.

### Departments

*As I See It*.....5

*Wirtgen Engineering*.....35



75,000 LBS

**Wirtgen**  
**W 2100**  
heavy on production, not on the scales

The W 2100 is simply the most powerful, the most productive, the most cost effective and the easiest to transport mill available. Winning by Design.

- 75,000 lbs. transport weight
- 635 CAT® hp
- 86" standard cutter width
- 13" cutting depth
- Interchangeable drums 79", 86", 96" and 108"
- 1200 gal. water tank
- Four track traction and stability
- 7'10" turning radius
- High capacity 40" reversing conveyors
- 120 lbs./hp cutting efficiency



**WIRTGEN AMERICA**

6030 Dana Way • Nashville, TN 37013 • 615-501-0600 • Fax 615-501-0691  
[www.wirtgenamerica.com](http://www.wirtgenamerica.com)



# Foamed Asphalt Expands Coast-To-Coast

From coast-to-coast, road agencies and road builders in North America are waking up to the tremendous benefits base recycling with foamed asphalt can bring to their taxpaying customers.

From the pine forests of New England, to the scenic Lake Superior shore in Ontario, to the bayous of Louisiana, to California's fertile Central Valley, foamed asphalt base recycling using the powerful and versatile Wirtgen WR 2500 is proving its benefits and utility to a growing crowd of stakeholders.

Why is base recycling with foamed asphalt getting so much attention these days in North America? Because Wirtgen's WR 2500 is demonstrating that foamed asphalt is a process whose time has come, and Wirtgen America is putting the "pedal to the metal" to get the word out.

## **Foamed Asphalt The Future**

"Foamed" or "expanded" asphalt is created by carefully injecting a predetermined amount of cold water into hot penetration-grade asphalt in the mixing chamber of a pavement remixing unit, and offers a cost-effective alternate for road base stabilization.

Since the end of the 1980s, Wirtgen has been a major player in development of foamed asphalt (bitumen) technology, in which foamed hot asphalt is used to stabilize and improve existing road materials, producing highest quality base courses and cold mixes at lowest cost.

These materials can be processed in-place by milling and crushing the existing pavement structure — while incorporating foamed asphalt — using the WR 2500 Recycler from Wirtgen. Precise addition of water allows control of the rate of asphalt expansion and the amount of expansion. Foamed asphalt technology is built into the WR 2500, not tacked on as an after-market add-on.

The expanded asphalt has a resulting high surface area available for bonding with the aggregate, leading to a stable road base using the existing in-place materials. The benefit is substantial cost savings over use of asphalt emulsions for base stabilization, and complete elimination of the cure or "break" period. The foamed base then is graded and compacted, and can permit traffic — including heavy trucks — almost immediately.

## **Bringing Experience To Bear**

Wirtgen America is bringing some of the best minds in the world in foamed asphalt to North America because we want to make foamed asphalt work for everyone and dispel any myths that may be floating around.

We're taking the concept to a high technical level with people who have years and years of experience. They can tell how well an application is working just by looking at it or feeling it. We can put that experience to work for you as we bring foamed asphalt technology to every corner of this continent.

And foamed asphalt is applicable to every climate in North America. We've done it the desert, in the high mountains, in the boreal forests of Canada and the humid bayous of Louisiana. Foamed asphalt will benefit you whether you're a road owner or a road contractor.

## **Preserves Environment**

Foamed asphalt base recycling using the WR 2500 also saves valuable aggregate resources. We all know in most areas of North America there are plenty of aggregates resources in situ. What we're running out of is aggregate that is permitted for extraction.

Existing aggregate sites once on the outskirts of town now are surrounded by new neighbors who are not only opposed to existing mining operations and truck traffic, but any kind of expansion of the quarry or pit in the future.

In the meantime, due to environmental opposition, aggregate operations are finding it hard to get approval for new extraction sites, even way out in the country, far away from the cities where most of the aggregate is consumed.

Little wonder that base recycling using foamed asphalt is so desirable, because it reuses existing aggregates resources that already have been acquired, permitted, shot, loaded, crushed, screened, stockpiled, reloaded and hauled. The existing investment in processed aggregate is optimized, because the material is just lying there in the roadbed waiting to be reused.

For example, in September, a report released by the Construction Materials Association of California found state policymakers and planners had failed to consider whether local supplies of construction aggregates will be available to meet the state's urgent need of upgrading, maintaining and building new infrastructure.

But reuse of existing aggregates through techniques such as base recycling with foamed asphalt — as described in California on pages 12-13 — can prolong those resources until new extractive sites can be permitted.

In this issue of *Wirtgen Technology* we've prepared a *SPECIAL REPORT: Foamed Asphalt Coast-To-Coast*.

Please accept my personal invitation to take a few moments to familiarize yourself with this exciting new technology, and by all means, contact me personally to learn more about what foamed asphalt base recycling using the WR 2500 can do for you.

Stu Murray  
President  
Wirtgen America Inc.

As I see it...

# Maine Application Gives New England Glimpse Of Foamed Asphalt

A late summer demonstration of base recycling using foamed asphalt and the Wirtgen WR 2500 will give participating New England states a look at how foamed asphalt can perform in their harsh Northeast climate.

The Maine Department of Transportation research project involved the full-depth reclamation using foamed asphalt as a stabilizing agent on Maine State Route 8 near Belgrade Lakes, in a forested area north of Augusta.

## **Foamed Asphalt Stabilizes Bases**

"Foamed" or "expanded" asphalt — created by carefully injecting a predetermined amount of cold water into hot penetration-grade asphalt in the mixing chamber of a pavement remixing unit — offers a cost-effective alternate for roadbase stabilization.

When a carefully metered amount of cold water is introduced into hot asphalt — in this case, the mixing chamber of the WR 2500 — a foam is formed, increasing its volume and surface area. This enables stiff road-grade asphalt to be mixed together with cold, moist aggregate without having to resort to the added cost of cutting back the binder with a solvent or emulsifying it. A benefit is that foaming reduces the viscosity of the binder, permitting easier dispersion through the aggregate.

The foaming action of hot asphalt — in which the asphalt "explodes" into millions of bubbles when it comes into contact with cold water — is not unlike the splattering which takes place when drops of water stray into hot cooking oil on the stove top.

## **Evaluating Foamed Asphalt**

"We're evaluating the effectiveness of foamed asphalt," said John R. Devin, project manager, Maine DOT Regional Program. "We want to look at new techniques and inexpensive ways to improve roads without full reconstruction. We wanted to try foamed asphalt, because it really hasn't been used in this part of the country."

Prior to this work a Wirtgen WLB 10 testing lab was purchased jointly by the Maine DOT with funding from the Recycled Materials Resource Center of the University of New Hampshire, and Worcester Polytechnic Institute. It will be used in Maine and in other participating New England states.

The Maine S.R. 8 project was providing apples-to-apples comparison with different reconstruction techniques, Devin said. A final report will document construction practices and evaluate the performance of the WLB 10. Also, section performance will be monitored for at least five years.

"Better utilization of existing materials, cutting down on hauling costs, and using cold mix to speed up our work all fits very well with our philosophy on improving our low-volume roads without completely rebuilding them," said John E. Dority, chief engineer, Maine DOT, who visited the project. "We hope foamed asphalt bases will give us the strength we need to get a service life of 12 to 15 years."

"We're very interested in this process, because we want to do more recycling in-place," said James Andrews, P.E., Maine DOT construction manager and chair, Maine DOT Recycling Committee.

"We want something that will be economical and give us the structural base that we need for our roads up here in Maine," Andrews said. "We're looking at what will hold up to ESALs, the freeze/thaw cycles, and what will permit minimal thickness asphalt overlays for economic reasons."

Another benefit, Andrews said, is conservation of existing aggregate resources. "Our aggregate sources are being rapidly depleted," he said. "Blasting and processing granite is a very expensive process



*Portland cement is mixed in foam-stabilizing stages; operation moves from left to right*



WR 2500 foam stabilizes S. R. 8 in Maine

compared to recycling it in-place. It all comes down to money."

"This job has small segments of full reconstruction, in which we've replaced the existing base full-depth, with gravel and pavement," Devin said. "There are some areas in which we reclaimed the existing pavement and added gravel on top and paved over, we're doing the foamed asphalt-treated base, and some segments will be straight overlay. These will provide a really good comparison."

#### WLB 10 Used For Testing

For the foamed asphalt portion, about 2.8 miles of Route 8 were foam asphalt-recycled. Tests of existing material were undertaken with the WLB 10 Foamed Bitumen Laboratory to determine the optimum amount of foamed asphalt to be added, and other mix elements.

Large boulders in the road's gravel base were found at varying depths from the surface, ranging from 6 to 8 inches deep. Because an average foam recycled layer of 8 inches is required to meet the design criteria, an additional 2 inches of crusher dust was placed on the road surface prior to recycling.

The final mix design included:

- The additional 2 inches of crusher dust
- Addition of 1.5 percent portland cement by mass
- Addition of foamed asphalt to the pulverized material to 2.5 percent by mass, and
- Recycling of the pulverized pavement with the added crusher dust to a depth of 8 inches.

The construction process began with cleaning out and re-cutting of roadside drainage ditches, followed by recycling existing pavement in-place, and placement of the 2 inches of crusher dust (from a local source) on top of the reclaimed existing pavement. The entire section then was pulverized again, shaped and compacted to accommodate existing traffic.

Then the portland cement was spread and the entire travel lane width was foam recycled in three passes with the WR 2500, compacted and finished. This was followed by a 3.2-inch asphalt wearing course. (As a further test of the structural capabilities of the foamed asphalt treatment, a half mile long section of roadway received only 1.6 inches of wearing surface.)

General contractor is Farrin Brothers & Smith, and Lane Construction was undertaking the foamed asphalt portion.



Courier truck delivers using freshly foam-stabilized road base

### About the Model WR 2500

Introduced in North America in 1996, the Model WR 2500 Road Reclaimer and Soil Stabilizer is a robust, multipurpose machine designed for the 21st Century.

The design incorporates a 690 hp (intermittent-rated), V-12 turbocharged/aftercooled diesel engine to power a 96-inch-wide by 20-inch-deep cutting rotor, making it a true, high-horsepower deep-cutting heavy-weight.

Perhaps the most significant of several innovative features is a two-frame design that allows the WR 2500 to retain the very important "floating hood" concept, which allows an expanded volume of material to pass freely through the process without creating a "friction brake" effect on the cutter and cutter drive components.

Material size is controlled by using hydraulically adjustable, manganese-lined breaker bars that can be remotely adjusted by the machine operator to tighten or close down the area between the rotating cutter and the impact bars, a scheme used for decades by the aggregate crushing industry.

Its Type III holder system allows quick and easy replacement of broken or worn-out cutter bit toolholders without the inconvenience and added cost of a cutting torch and welder. Drum rebuilding can be executed in one day by two workers without removal of the cutter.

Its milling width is 96 inches, with a working depth 0.0 to 20 inches. It has an engine output of 601 continuous hp, with an operating weight of 63,336 lbs. It has a four-wheel, all-wheel travel drive system.

# Foamed Asphalt Fights Louisiana Pavement Cracking



WR 2500 foam-stabilizes around curve

*“We looked for a base that would provide a good support value, yet be flexible and not develop reflective cracking.”*

This September, public works officials in Louisiana got their first look at foamed asphalt at a demonstration project on Bolden and Dry Bayou roads in St. Landry Parish in the central part of that state.

There, a contractor hopes that foamed asphalt base courses will provide an alternate to problematic soil cement base courses, some of which — due to local conditions — have failed within a year after construction.

Typically, Louisiana has high plasticity soils with high silt contents. And because the state averages 55 inches of rain each year, with little relief, a very high water table results. Also, no naturally occurring aggregates remain in Louisiana; instead crushed stone must be barged in.

## **Problems With Soil-Cement**

“For base course work, the most economical method has been a soil-cement stabilized road base, because graded aggregate base was too expensive,” said James M. Winford, P.E., James Corporation of Opelousas, Inc.

To get needed compressive strengths for road base, cement contents in excess of 10 percent by volume are required. “That meant we are spending \$3 per square yard for portland cement material only, exclusive of processing,” Winford said.

“We end up with a very, very rigid base with high cement contents,” he

said. “And when we place our typical 3.5 inches of dense graded hot mix asphalt in two lifts, we’re able to achieve initially smooth pavements. But once the cement hydrated we’d experience severe reflective cracking.”

A severe, three-year drought in the late 1990s led to cracks as wide as three inches. “We had roads that had structurally failed within a year after they were built,” he said. Compounding this was the fact that water easily enters those cracks, eroding the subgrade below the cement-treated base.

## **Considering Foamed Asphalt**

Because of these problems, James Corporation and its allies wondered whether foamed asphalt would provide an alternate.

“We looked for a base that would provide a good support value, yet be flexible and not develop reflective cracking,” Winford said. Both Winford, and James Corporation’s owner, Laddie L. James, communicated with state and local officials about the prospect of foamed asphalt.

Talks commenced with St. Landry Parish officials, and road corings indicated material was there that could be successfully recycled using foamed asphalt.

Ronald Buschel, Police Juror representing the St. Landry Parish Fifth District Highway Road Commission, selected two roads that had been bituminous- or chip seal-surfaced at one time, but been regraded into gravel roads for ease of maintenance.



Hydrated lime was spread at 112 lb. per cubic foot of soil

Wirtgen's expert on foamed asphalt or bitumen, Mike Marshall, visited the area in June 2001, and three weeks later a representative of A.A. Loudon & Partners arrived with a Wirtgen WLB 10 foamed asphalt lab. Samples were obtained and prepared for optimum design.

"On this job we added hydrated lime, because the lime would reduce the soil's volume changes in the absence or presence of moisture," Winford said.

#### Processed In Two Stages

During the initial survey all cross drains were located, making sure that at least a foot of cover would lie over them.

Hydrated lime was spread at 3 percent by weight of soil (112 lb. per cubic foot), and was mixed in conventionally to an 8-inch depth by the Wirtgen WR 2500, compacted with a padfoot Hamm roller, graded, rolled again with a pneumatic roller, and finally compacted with a nonvibratory, double-drum steel roller.

The lime base was watered and the next morning, foamed asphalt was applied. A performance-graded PG 64-22 paving asphalt was used and the WR 2500 foaming application moved forward at about 50 feet per minute.

Some 2,700 lineal feet in two sections of Dry Bayou Road were foam stabilized. On Bolden Road, some 9,100 lineal feet were processed. "All sections were processed 21 feet wide, and were to receive a 20-foot wide hot mix asphalt section surfacing," Winford said. A bituminous surface treatment would be placed on another section for comparison.

After the pass with the foamed asphalt, once full cross sectional cover-

age was achieved, the road was compacted with the Hamm pad-foot roller, followed by initial grading, finish compaction with a pneumatic roller, and finally with a smooth drum roller with no vibration.

"We also watered under final grading to seal the surface, and did some grading the next morning and applied an SS-1 curing membrane on top of that," Winford said.


#### More Miles For The Dollar

While their average daily traffic is low compared to other routes, these roads are subject to very heavy traffic during sugar cane harvest season. "There's a lot of cane crop, and during the early fall months that cane is cut and hauled to sugar mills," Winford



James Winford, James Corporation, checks base

said. "These are allowed by permit to get over 100,000 lbs in weight. We're anxious to see how these roads perform under such heavy, isolated loads.

"Exclusive of the lime, 3 percent foamed asphalt material costs us about a dollar a square yard," Winford said. "When you compare that to 10 percent cement for \$3 a square yard, you see you can get more miles of road for the same dollar, but with better theoretical performance." 



Foamed asphalt base recycling has potential to replace soil-cement bases in Louisiana

# Expanded Asphalt Right Choice For Scenic Park

Base recycling with foamed or expanded asphalt played the central role in an environmentally focused rehabilitation of the Trans-Canada Highway (Highway 17) east of Wawa, Ont., in a provincial park above spectacular Lake Superior.

Because of the location of this 14.3-mile project within Ontario's Lake Superior Provincial Park, the province planned a completely "green" reconstruction for this late-summer 2001 project.

- The foamed (or as many prefer, expanded) asphalt base recycling by contractor Roto-Mill Services Ltd., Brampton, Ont., reused the complete, existing roadway as a base course, albeit strengthened significantly through the expanded or foamed asphalt process
- Rock removed from widened road cuts was crushed and used as aggregate in asphalt overlays from an on-site portable asphalt plant, sited in a manner that would not draw attention to it, and
- The recycled road itself had been recycled 20 years earlier, so the project constituted a recycling of a recycled road.

## Building New Base

"We're building a stabilized, expanded asphalt base," said Ted Arscott, president, Roto-Mill. "Just about everything used on the job is being recycled. We're recycling the old asphalt and the underlying base, plus all the stone from the rock cuts, which becomes aggregate for the new asphalt pavement." Conventionally, that rock would have become part of the cut-and-fill along the roadway, or wasted.

"We take a whole series of cores for testing and study purposes," Arscott said. "We develop case histories of jobs for marketing purposes, and these quality control tests are for the purpose of verifying, year after year, the strength and

value of the product."

"This project is a test pit, so to speak," said Les Coulas, construction superintendent for E & E Seegmiller, Kitchener, Ont., prime contractor for the project. "Our goal is to

recycle these natural aggregates, and to not use virgin aggregates," Coulas said. "Our aggregate sources are getting to the point of depletion. The more we can recycle, the better it will be for years down the road."

A test section of full-depth reclamation without foamed or expanded asphalt stabilizer also was constructed.

Three different mix designs were required for this job, Arscott said. "That's because the underlying granular here is from different locations in the past," he said. "One area has a mix design of 2.8 percent AC added, another 3.0 percent AC added, and the other has 3.0 percent AC added, with some granular fines added to bring the aggregates up to the mix design criteria."

While some contractors choose to pulverize the existing road and apply expanded asphalt in one pass using the Wirtgen WR 2500, Roto-Mill prefers to pre-pulverize the existing road before foaming; then return with the WR 2500 and apply expanded asphalt.

"If you have a road with very shallow asphalt (2 to 3 inches), of very consistent depth, and you only want to do



Base awaits compaction



Newly stabilized base stands up to cement truck immediately



WR 2500 at work in provincial park

limited correction of the road's slope or alignment, you can do it in the one-pass method," Arscott said.


"The problem," he added, "is that if the depth of the asphalt changes down the road, you have to lower the depth of the Wirtgen WR 2500, because you always must take the asphalt pavement, plus about 50 percent granular. And when you lower the WR 2500 to get through the asphalt and into the proper blend of the gravel, you must also add more asphalt cement to keep the mix design in proportion. So you end up using more very expensive liquid asphalt cement to do a deeper job than is necessary, which may give you compaction problems because of the varying depth."

### **First Foamed Asphalt**

Significantly, this was the first application of foamed asphalt, or expanded bitumen, base recycling by the Province of Ontario, although Ontario municipalities have been using the process for five years.

"This is the first time expanded asphalt has been used in a provincial department (Ministry of Transportation) project anywhere in Canada," Arscott said. "Here, the expanded asphalt process is replacing one layer of hot mix asphalt (HMA). If this had been done conventionally, we would have pulverized, then placed three layers of HMA. Here we've pulverized, applied expanded asphalt, paved two layers of HMA, and in doing so eliminated one layer of HMA."

Roto-Mill has years of experience undertaking foamed asphalt base projects for municipalities all over Ontario.

"We're the experts," Roto-Mill's Arscott said. "We've done more miles of road with expanded asphalt than anybody else in North America. We've had this WR 2500 for five years now, so we've been extremely happy in producing expanded asphalt. In 2001 we'll have done 55 lane miles of expanded asphalt base," he said. 

### **About the Trans-Canada Highway**

The Trans-Canada Highway (Highway 17) was a bold concept to bring together Canada's two coasts, but was constructed in less than 15 years.

The highway wasn't meant to be a high-level Interstate-type facility, but be a modern, first-class, all-weather road intended to be the shortest practical east-west route across each of the provinces, reports the Ontario Ministry of Transportation.

The Trans-Canada Highway Act was passed in December 1949 and minimum design standards were established by the federal and provincial governments shortly thereafter. Funding was shared between the central government and the provinces.

With 1,453 miles of highway lying within its borders, Ontario controls 30 per cent of the Trans-Canada Highway's 4,844 miles.

Toward the end of the project, in Ontario, completion of the highway languished in "the Gap", a section of rugged, heavily forested terrain adjoining Wawa, Ont. But the official opening ceremonies of this Lake Superior section of the Trans-Canada Highway took place Sept. 17, 1960.

The original Wawa Goose was built to celebrate the construction of the Trans-Canada Highway through Wawa, and was dedicated at the highway opening ceremonies in 1960. A newer goose now stands on a scenic bluff near a tourist center on the east side of Wawa.

# Caltrans Gets Look At Foamed Asphalt Base Recycling

This summer the California Department of Transportation (Caltrans) got its first look at foamed asphalt base recycling, using two Wirtgen WR 2500s.

As a result, 20 lane miles were reconstructed and repaved in 20 days on S.R. 20 west of Williams in Colusa County, in California's agriculture-intensive Central Valley.

The project was launched over a year earlier, in January 2000, when Wirtgen opened discussions with Caltrans District 3 to explore developing a cold, in-place foamed asphalt recycling project.

Those discussions were followed by a presentation on foamed asphalt — including hands-on demonstrations using the Wirtgen WLB 10 — at Caltrans' research laboratory in Sacramento that February (see *Caltrans Personnel Hear Benefits Of Foamed Asphalt*, Summer 2000, pp. 20-21).

The WLB 10 is a mobile, laboratory-scale foamed asphalt plant which gives contractors and other users of foamed asphalt an advance look at how foamed asphalt will perform with a variety of materials and liquid asphalts.

Caltrans identified a section of S.R. 20 that was due for rehabilitation, and suggested it would be a good candidate for a recycling project.

Caltrans' existing design strategy for the section would call for milling off the existing aged, thermal-cracked asphalt and placing overlays. Wirtgen brought to the table initial benefits of foamed asphalt base recycling using the WR 2500, including:

- Enhanced structural integrity, via a thick, 9-inch (225-mm) bound layer
- No disturbance of subgrade
- Shorter construction period than with full reconstruction, and
- All of the pulverized existing asphalt concrete and aggregate base would be recycled, thereby saving considerable "virgin" aggregate from being hauled to the site.

Wirtgen employed the expertise of its foamed asphalt consultants, A.A. Loudon & Partners, to carry out initial site investigations to establish if the proposed section was suitable for cold in-place foamed asphalt base recycling, and if so, to determine a mix design compatible with the existing materials and the Caltrans design requirements.

For the initial site investigation, Caltrans provided as-built data, traffic estimates, pavement deflection data and core samples from the existing pavement.

For this section of S.R. 20, an anticipated traffic index of 11 was given, relating to a structural capacity requirement for 6.6 million standard axle loads (ESALs).

Methods of investigation included visual assessment, a dynamic cone penetrometer survey, test pits, core sampling and deflection measurements.

Samples from the test pits were subjected to laboratory testing, to establish the quality of the materials in the existing pavement layers, and in the underlying subgrade. Typical tests include, sieve analysis, plasticity and CBR.

The results from these tests — together with samples of the materials — were used to formulate the mix design.

Using the WLB 10, portions of the samples were prepared by mixing



Existing pavement recycled to depth of 9 inches



Two WR 2500s foam-stabilize base in echelon in Colusa County, California

them with various percentages of foamed asphalt to determine the optimum percentage to be added to meet the desired design requirement.

The specimens were prepared using standard compaction methods, and were then cured. Once cured, the specimens were subjected to various tests to assess their engineering properties as well as their susceptibility to moisture.

The final procedure for Caltrans S.R. 20 was:

- Recycle the existing pavement to a depth of 9 inches (225 mm)
- Add foamed asphalt to the pulverized material at a rate of 2.5 percent by mass, and
- Add 1.5 percent water by mass to assist with the foamed asphalt dispersion and facilitate compaction.

The total length of foamed asphalt recycling project was 10.04 miles, or 16.2 km, with a total area of 1.42 million square feet, or 131,922 square meters.


During the week of July 9, work began to recycle 10.04-mile distance from the east, recycling the westbound lane. In the week of July 16, that recycled

lane was paved with 1.8 inches (46 mm) of asphalt. Beginning July 23, the eastbound lane was foam-recycled to the same depth, followed by paving the week of July 30. The total number of days elapsed was 20.

Two Wirtgen WR 2500 Recyclers were used, working in echelon, one ahead of the other.

Each WR 2500 was coupled with an asphalt supply tanker, in front, and propelled by the WR 2500. The asphalt was heated to a temperature of 350 deg F. A water cart, in rear, was pulled by the WR 2500.

The lead WR 2500 was fitted with an 8-ft. (2.5 m) cutter and the following WR 2500 fitted with a 10-ft. (3.0 m) cutter. The road width varied from 21.5 ft. (6.6 m) to 31.5 ft. (9.72 m), so it always was possible to recycle one-half of the road in one pass.

The Wirtgen foam spray bar system is fitted with 16 jets, and it's possible to cut off jets so as not to "double dose" the recycled material with asphalt. Foam spray jets can be switched on or off from the cabin to accommodate varying road widths. 

### For More Information

Wirtgen America Inc. has a variety of resource materials on foamed asphalt base recycling with the WR 2500. These are available by contacting your sales manager or by contacting Wirtgen America Inc.

*Wirtgen Cold Recycling Manual*  
(Ref: ISBN)

*Foamed Asphalt, the Innovative Technology* (Ref: 54-14)

*Rehabilitation of Heavily Trafficked Road* (Ref: 49-32)

*Cold Processing of Construction Materials* (Ref: 49-12)

*WR 2500 Recycler* (Ref: 54-11)

*WLB 10 Foamed Asphalt Laboratory Plant* (Ref: 54-12)

*Video, Foamed asphalt, the Innovative Binder* (Ref: 01-01)

*Video, Rehabilitation of Heavily Trafficked Roads* (Ref: 05-99)

**blue skies,  
sunny days,  
take the convertible...**



The Wirtgen WR 2500 Stabilizer/Pulverizer is two great machines in one. The WR 2500 "convertible" is the ultimate tanning machine with an operator's console that pivots from one side of the machine to the other for ease of operation on both sides.

Then there is the WR 2500 "sedan" – equipped with a fully air conditioned cab that extends a full 8" past the edge of the body for an excellent view of the job.

There are more outstanding features of the WR 2500 like: • an 8 ft. or a 10 ft. cutter • up-cut-down-cut • two wheel and four wheel steering • a variety of liquid injection pumps • 690 hp diesel engine • full time 4 wheel drive • 20 inch deep cutting and more.

So no matter which model you prefer, Wirtgen has the WR 2500 to meet your needs. After all, there's a reason Wirtgen is Number One in North America (and the world)...  
Winning by Design.

**on second thought,  
get the cab.**



**Wirtgen America**

*The Obvious Choice*

6030 Dana Way • Nashville, TN 37013 • 615-501-0600 • Fax 615-501-0691

[www.wirtgenamerica.com](http://www.wirtgenamerica.com)

# Colorado Contractor Builds Future Stabilizing Bases



*Lime-stabilizing in Broomfield, Colorado*

A Colorado contractor in the Denver area is securing its future utilizing WR 2500s to stabilize construction sites throughout the metro area.

As the Denver area has grown, so has Asphalt Recycling & Stabilization, Inc., Littleton, Colo. (ARS). Since 1985, ARS has become the largest stabilization contractor in the state.

ARS is using the WR 2500 to lime- and cement-stabilize civil engineering projects, and has benefited from the expansive soils which fill the valleys in the mountainous west.

These soils are tamed through a variety of processes, depending on soil type and construction application, including lime, fly ash, cement kiln dust (CKD), and cement treated base (CTB). ARS has found the WR 2500 to be ideal for this work.

The projects in which ARS has been involved comprise an honor roll of some of the most famous construction projects in Colorado, including Denver International Airport, the E-470 Tollway, and the C-470 Beltway.

And as the foamed asphalt road base stabilization process becomes better-known in Colorado, ARS will be well-positioned to leverage its WR 2500s for that work as well.

## ***Tried It And Liked It***

ARS acquired its first WR 2500 in 1999. "Our guys tried it and liked it," said Kim Haarberg, vice president. "It has a really good tractive effort. It seems to be very well engineered and is a little more fuel efficient than other makes. It appears to be a little bit better thought out. And customer service would jump on any problem we had and want to make it right."

So when it came time for another machine, ARS bought another WR 2500, which was delivered in May 2001.

ARS got to know the Wirtgen brand even better by visiting the Wirtgen stand at Bauma '01 in Munich. Bauma is the world's largest construction equipment exposition, and alternates on a three-year basis with Intermat in Paris and Conexpo/ConAgg in Las Vegas.

"I was really impressed when we went to Bauma," Haarberg said. "We saw the organization and the enthusiasm that the Wirtgen family brings to the product. Their goal is to make the best machinery and make their customers profitable."

"We got more bang for the buck," said Jim Anttonen, president. "The machines are very easy to operate. Within 10 minutes of when I first got on the machine I was running it. It was easy to learn and has a lot fewer daily service points. While Kim and I no longer operate the machines, we know that's important for our workers. Most of our operators feel at ease the first day they're on the machines."

## ***From Salesmen To Customers***

Haarberg and Anttonen are unique in that they began as equipment salesmen who identified an unserved market niche, and launched a construction company to serve it.

"In 1985, Jim and I both were heavy equipment sales-



*In Parker, Colorado, ARS lime-slurry stabilizes Main Street in reverse*

men," Haarberg said. "We decided to go where the real money was, the contractor's side. Of course we later found out that while contractors handle a lot of money, they don't always make a lot of money!"

ARS began pulverizing asphalt pavements for cities, counties and states. "At that time the stabilization element was using asphalt emulsions, which is the predecessor of the foamed asphalt process," Haarberg said. "But the state began specifying other products so we started in on dry product work such as lime."

When Denver International Airport (DIA) was started there was a tremendous amount of stabilization to do, and ARS was there. "We pursued it with all of our energies and ended up doing the vast majority of that work at the airport," Haarberg said.

"The vast majority of the stabilizing work we do is taking the expansive, damaging soils with high swell potential, and treating with lime or other calcium-based product to eliminate the

swell potential," Anttonen said.

"We've also done a lot of soil-cement, in which a sandy, nonexpansive material is turned into a strong base," he said. Such a super-strong base can reduce the thicknesses of asphalt or concrete driving courses and save enormous sums of money.

Yet another market ARS is developing is ongoing residential construction as farmland is converted to tract housing. Highly expansive soils in these areas require stabilization of land so the pavers can do their work.


In late August, ARS was lime-stabilizing the parking area and driving courses around the new municipal complex of Broomfield, Colo. There, a 7 percent lime treated base was being stabilized to a depth of 12 inches,



*At ARS HQ are Leroy, Kim Haarberg, Dummy, and James Anttonen*

using a WR 2500.

And in south-suburban Parker, Colo., an ARS WR 2500 was lime-slurry stabilizing Main Street, with a 12-inch lime-treated subgrade at 6 percent hydrated lime.

The WR 2500 made the work go faster, said Kip Nelson, job superintendent at Parker. "The WR 2500 is very operator-friendly," Nelson said. "Its power is outstanding. It's one of the best machines I've ever run." 

# Two W 2200s Mill Enormous Quantities On Illinois Interstate



Payne & Dolan crew checks depth of cut

This summer, two W 2200 cold milling machines from Wirtgen America Inc. were removing aged asphalt off I-88 in tremendous quantities near DeKalb, Ill.

In July, as the project began, the two machines cut some 226,000 square yards of tough asphalt for their owner, Payne & Dolan Inc., for the project for the Illinois State Toll Highway Authority and prime contractor Rockford Blacktop.

There, the lead W 2200 was milling 3.5 to 4 inches deep with a 12.5-foot cutter head, and was being followed by a W 2200 with an 8-foot head.

"We're removing as much pavement as we can as efficiently and as quickly as we can," said Tony Bodway, Rotomilling Services, Payne & Dolan Inc. "We've got both W 2200s out here for their high-production capabilities."

"On the average, we're doing 75,000 to 80,000 square yards per day," said Jon Dortz, mill foreman. "On our best day we did 11 lane miles in a 10-hour shift." That's part of a total of 836,000 square yards on this project. The project is 15 miles long, resulting in 60 lane miles total.

In these quantities, it's extremely important to have a mill that won't quit, Dortz said. "The trucking costs add up

so fast that if we break down for just an hour, and we have 10 trucks waiting, that's \$680 shot out the window because the trucks aren't utilized," he said.

And the W 2200s are filling the bill, he said. "Our uptime is 99 percent," Dortz said. "If we keep up on maintenance we never have a breakdown."

"We own a variety of machines, but these W 2200s have given us great production and service," Bodway said. "We haven't had any breakdowns. They're good, strong machines."

## Not Just For High-Volume

Dortz said as big as they are, the W 2200s are suited for smaller jobs as well as the big production Interstate work. "For us, its versatility is hard to believe," he said. "Sure, the W 2200s are great on a main line job, but we've done parking lots and inner city work with them as well. The big difference is that when you need the power on the main line, the power is there."

"We can go anywhere with the W 2200s that virtually any other mill can go," Bodway said. "This machine can go wherever the work is."

And Payne & Dolan has adapted their W 2200s for increased productivity. "We've put larger orifices on our conveyor swings so we can move the conveyor much faster than when originally delivered," Dortz said.

"Adapting the swing ram system on

*"We own a variety of machines, but these W 2200s have given us great production and service. We haven't had any breakdowns. They're good, strong machines."*



*High productivity calls for lots of trucks and no breakdowns*

the conveyor, we sped up the swing so we do not have to stop or slow down when changing trucks," he said. "If you can swing the upper conveyor faster from truck to truck, you don't have to go slower. We run our trucks side by side so the operator never has to stop."

"When you're milling, the worst thing that can happen is to stop and wait on trucks," Bodway said. "Here we have the luxury of having trucks run side by side. You don't have to stop milling; you just keep going."

### **The Tools They Need**

In addition to the two W 2200s, Payne & Dolan has two W 2100 DCs, four W 500s, a W 600, a 1900 with variable width cutter, and three WR 2500s including one with a foamed asphalt package.

Also, another 391,000 lineal feet of shoulder rumble strips are being cut by Payne & Dolan, using a W 500 equipped with a rumble strip kit. "We're doing approximately 7.5 miles per day of rumble strips," Bodway said.

"Wirtgen has done a great job giving us the tools we need to go out and build our business, and allow us to offer our customers more than just cold milling," Bodway said. "We can do everything."

In September the mills were revealing swathes of paving fabric placed over fissures in the original portland cement concrete pavement, which unfortunately did not stop those cracks from reflecting through the overlay to the surface.

"Under the new lanes as part of this project, a membrane



*Lead W 2200 moves west on I-88*

was installed which they hope will remove cracking," Bodway said. In the meantime, the scraps of paving fabric contaminated the project's reclaimed asphalt pavement so it can't be used in driving courses.



# W 2200 Lets Alabama Contractor Enter Bigger Markets

A big Wirtgen Model W 2200 with 12-foot-wide drum is boosting productivity and opening broader markets for Alabama's growing Kelly Construction Company.

The W 2200's 12-foot drum lets Kelly mill an entire lane in one pass, which can simplify the kind of night milling operations that the Alabama Department of Transportation has been scheduling. It supplements a 7-foot, 2-inch drum supplied originally.

## **Carving Niche In Two Years**

As milling subcontractor, Kelly Construction has carved a substantial niche for itself in a matter of two years, and has built its success on the Wirtgen platform.

Kelly Construction was founded May 1, 1999, and began with just one Wirtgen milling machine, a W 1000E, and a paver, said Robert E. Kelly, president. "We started out, and still do, small paving projects for private customers, such as parking lots and driveways."

But the early anchor work for Kelly is an ongoing, multi-year sewer upgrade project for Jefferson County, Ala. Kelly works with a variety of prime contractors on this long-term project. "The contracts have us involved in milling and resurfacing, so it's a good fit," Kelly said.

"After a while we realized cold milling operations with a bigger machine could establish a profit center separate from the sewer rehab program," Kelly said. "We knew we would like to have a bigger machine that would provide more versatility than a 40-inch drum. We wanted to ease into highway work and bigger roads. And we wanted to increase productivity."

So in October 2000 Kelly Construction acquired a Model 1900 DC. "We use it for sewer rehab and also for bigger milling jobs for state highway work." And in summer 2001, Kelly acquired the W 2200.

"We recognized that we had a good potential in the milling business," Kelly said. "Over the past few years we feel that we've become the best in the business. We mobilize better than anybody, we can mill better than anybody, and our cleanup crews are amazing. Given that, we feel we can do some big things in DOT work, and we decided we needed the

bigger machine that the W 2200 provides."

There is potential for growth, Kelly said. "Our philosophy is that we want to build some strong business relationships with some key, prime customers," he said. "We know that primes will use us only if we can do a very, very good job. We're going to be customer-driven, not job-driven, so the customer feels that we are an extension of their staff."

One of the pieces that Kelly put in place in early 2000 was his right-hand man, general superintendent Mark Ratliff. "He is the biggest piece of the puzzle," Kelly said.

"Customer communications, a work plan and coordination are the means by which we can stay on top," Ratliff said. "That means keeping in touch with customers to satisfy their needs."

## **Kelly Settles On Wirtgen Platform**

Kelly has chosen to build its growing business entirely on the Wirtgen platform. "They're dependable, and we've had good success with them," Kelly said. "When doing work for a prime contractor, the last thing we want is to be the cause of them shutting a job down, especially with cover-as-you-go jobs. We don't want to use equipment that breaks down, so we use Wirtgen."

Wirtgen's built-in diagnostics also has appeal. "You can almost immediately find out exactly what the problem is so you can be back running in no time," he said.



W 2200 standard cutter was working at 85 feet per minute



*W 2200 is ideal for large-volume night work on I-65 in Alabama*



*Robert Kelly, president, and Mark Ratliff, spearhead firm's growth*

The big W 2200 has found favor with Kelly's crews. "One of the best things about the W 2200 is the tilt-down console and the operator seats on both sides," said Richard Graves, operator.

The W 2200's innovative grade control feature impressed the crew with its potential for safe operation, compared to competing makes.

"I tried them all," said one crew member. "To adjust the grade, the grade control for the right side is on the right side of the mill, and for the left side on the left side," he said. "On most jobs, if you're out against traffic, you have to walk out in the traffic to adjust grade. On the W 2200, you can put both grade controls on either side, one on each side, or both up top."

This summer, Kelly was using the W 2200 to cut 5 to 5.5 inches deep on I-65

north of Birmingham. The W 2200 was working with its standard 7-foot, 2-inch-wide cutter at 85 feet per minute on I-65 in a nighttime mill-and-fill operation.

But at the time, Kelly's staff was awaiting delivery of the 12-foot drum assembly. "I love this machine," said Billy Green, supervisor for Kelly Construction. "We could get about 2 to 3 miles a night if they'd turn us loose. But we can't mill any more than they can get repaved at night.

"And I'm waiting on the 12-foot drum, so I can get it under there and hammer down even more," Green said. "We can do it all in one pass, without having to worry about backing up or catching up," he said.

"We started out with Wirtgen, and we like it, and that's what we're going to stay with, I hope," Green added.

### *About the W 2200*

The W 2200 is designed for big, continuous cold milling projects in which a pavement must be removed mile after mile.

The high-horsepower, high-production W 2200 lets contractors or government agencies mill large projects in surprisingly short periods of time. Its maximum milling depth of 13.7 inches (350 mm) means that entire pavements can be removed at a single pass.

Wirtgen's design engineers have produced a machine with a cutting width of 86.6 inches (2200 mm), four large D-5 crawler tracks, a milling drum with a high-efficiency mechanical belt drive, and a highly efficient front-loading system on a unit that is both compact and easy to operate. The W 2200's Caterpillar Model 3412E, 12 cylinder, 875 hp diesel engine is specified for the machine's maximum cutting depth, with an immense feed rate and high level of performance that keep operators and owners happy.

The front-loading conveyor system is sized to handle extremely large volumes of material, by means of its 43.3-inch (1100 mm) belts with a carrying capacity of over 1,100 tons (1000 metric tonnes) per hour.

# New Pro Pav Line Merges Best Features Of Euro, U.S. Designs

On June 12, 2001, Wirtgen GmbH acquired Global Asphalt Products, Inc., of Chambersburg, Pa., including its Pro Pav Series of hot mix asphalt paving equipment.

Wirtgen retained the Pro Pav Series brand as part of its asphalt paver marketing strategy through a new entity, Vögele America, Inc., and Global's Hugh Latimer was named president of Vögele America.

The Pro Pav line further strengthens the Wirtgen Group's position in road construction and reconstruction equipment worldwide, making cold milling and recycling machines, soil and asphalt compaction units, and now North American-designed asphalt paving equipment available to customers from its single-source provider in North America.

Pro Pav is aligning itself with Wirtgen Group's Vögele Asphalt Paver division to provide a common base for worldwide distribution opportunities. Now, Pro Pav's seven-model asphalt paver line, Wirtgen's market-leading, 18-model line-up of high performance milling machines — with the Hamm Compaction Division line of 30 models — will allow Wirtgen to serve the total market needs of North America's highway construction, reconstruction, repair and recycling and reclaiming contractors.

Earlier this year, Wirtgen Technology Magazine conducted this interview with Mr. Latimer on his plans for Pro Pav, Vögele America, and much more.

## **Wirtgen Technology: In what ways have the market for asphalt pavers changed in the last five years?**

**Hugh Latimer:** There is a shortage of skilled operators and mechanics on the contractor's side. Contractors are forced to have better capital management and equipment utilization. Their labor costs are higher.

A lot of the states are going to end result specifications, so there is a lot more emphasis placed on the quality of the end result, that is mat quality, instead of tonnages placed. So there have been changes in every facet of a paving contractor's business.

## **Has that affected the type of pavers he or she can use?**

Now that we've gone to end result testing, they can't use a lot of the old-style pavers of five and 10 years ago, which are becoming back-up machines.

The older style screeds weren't as rigid or as strong as they need to be in order to guarantee uniform densities across the full width of the paver. Traditionally you had a strong main screed and extensions to pave varying width. These extensions might be weak, worn out, or fall out of adjustment occasionally. So it's hard to guarantee quality and density across wide paving widths if you have a screed that won't stand up.

Also in terms of yields, the electron-

ics technology has changed, in which we're using noncontact sensing devices that aren't actually touching the surface. So you can get a much more precise measurement and yields with the new sonic technology of today.

Secondly, some of the older tractors don't have the power or feeder throughput capacity to get a lot of the heavier, larger stone content mixes like Superpave through the paver, and to keep the screed full.

## **What kind of challenges are these new mixes bringing to the table?**

Superpave mixes are challenges because they are a heavier mix design, and you have to roll it faster. And it's more rigid once it's in place. You have less time to work with the mix because it sets up faster.

## **How has Pro Pav changed over the years?**

Pro Pav is a relatively new player in the highway paver industry. It's only been around for eight years. Before that Pro Pav was known as Allatt and specialized in smaller commercial pavers, starting in 1953. The Pro Pav product was "clean sheeted" in the early 1990s as a brand new product founded from the merger of the Fortress/Allatt and Midland Paver companies.

The designers took some fundamentals from those two brands of

machines and launched a new highway class series of pavers, which is what we have now. They were looking toward the future 10 years ago, and I really tip my hat to those people.

They were really forward thinking, because they created an ideal, technologically advanced paver suited to these new trends in North American paving. They were built with European paving standards in mind, while not being built as a European paver.

For example, the screed was built with some of the concepts from Europe. The Pro Pav screed is heavier, more rigid than any competitive screed, by a thousand pounds. It's on both the 8- and 10-foot models, but our flagship screed is our HS-1020B screed, which is our 10-foot main line paver screed.

### ***What is new about your new paver, the 880RTB?***

It has the Swiftrac continuous rubber track undercarriage, instead of the conventional steel track system. It's faster and more maneuverable. And we've also incorporated all of the operator's features of the 10-foot model into the 8-foot machine.

### ***What are your manufacturing facilities like?***

We're in a brand new, state-of-the-art facility in Chambersburg, Pa., built in 1996, some 60,000 square feet on 10 acres. It was dedicated specifically for the design, assembly and support of asphalt pavers. We run an automotive-style operation here where 90 percent of the manufacturing and fabrication is outsourced, and we run with just-in-time inventory from an assembly standpoint.

Over the last five years we've developed a strong nucleus of suppliers in the Pennsylvania area which provide our fabrications and electrical components, and our hydraulic components. The rest of the machine is made of top-shelf brand name components, such as Cummins engines, and Sundstrand and Rexroth pumps and motors.

We keep a very broad inventory of all spare parts here, with an average low 90s percent same day fulfillment of original order. We're supporting over a thousand pavers worldwide out of this facility, and we have a fairly large turnover of spare parts.

### ***Why is Pro Pav a good fit for Vögele and Wirtgen?***

It provides the missing piece for Vögele to have a full product offering with which to supply the world. Vögele clearly dominates the market outside of North America, but they didn't have a product suitable for the North American paving market. We were a natural fit.

There are many differences between the European and North American paving markets that make bringing European pavers here not a good idea, as has been demonstrated time and again.



*Hugh Latimer in the Vögele America plant*

### ***That being said, what synergies are there between Vögele and Pro Pav products?***

Vögele had just undergone a major redesign of their flagship pavers, and saw a lot of similarities in the quality of our machines and their machines, based on the overall robustness and heaviness of our design, the undercarriage, the bogey frames on the wheeled machine, the heavy duty screed. Also, we're painting the pavers Vögele green and gray. Ours had been painted yellow in the past.

### ***Why is Vögele good fit for Pro Pav?***

We realized two benefits. One is the leverage of the strong reputation that Wirtgen America has built in the milling and soil stabilizer markets in North America. There's already instant recognition and credibility with the Wirtgen name with customers, many of whom are the same customers we have.

Secondly, Vögele brings much research and technology out of their German facility, and a lot of proven quality processes that we can leverage in our facility here in North America. These include electronic components, which are designed in-house. They have a lot of advanced features that we can tap into if or when we want to.

If a customer in North America needs a tamping screed to do base work instead of laying asphalt, we can see putting a Vögele screed on our tractor for this customer. Also, they have electrically heated screed technology for environmental reasons and paving applications. Vögele has been running electric screeds for 40 years and they've proven the technology.

### ***Does the German-style, high density Vögele screed have application for Superpave placement?***

They perhaps have some limited application right now. In the near term I don't think we'll get to the necessity of using Vögele's high density combination screeds to lay Superpave, primarily because of the American asphalt paving tradition of high speed construction or reconstruction.

### **How is the Pro Pav product line structured?**

We have seven models currently; three 8-foot pavers, and four 10-foot pavers. We have the broadest product line of any highway class manufacturer in the U.S. We have an all-wheel drive feature on our wheel machines now, and that gives us one extra model relative to the competition. With the introduction of the rubber tracked machine we have a full complement of 8-foot and 10-foot wheel and rubber tracked machines.

Our products primarily are sold through local distribution. The dealers are a very important link to the customers, who rely on dealers for training and support. The dealer has a key role in keeping the pavers up with good parts availability and support by well-trained service personnel.

### **What is the Pro Pav design philosophy?**

A lot of people start with the screed; we started with the tractor. Our goal is to have a very stable tractor that provides a lot of stability and balance, and provides a lot of tractive effort.

This strongly affects the screed. Every time the tractor moves, or if there are problems with the tractor and the continuous mobility of the paver, it ends up giving you a blemish on the mat. Among the things we specifically developed was our unique portal axle design, which gives us a very true differential and allows us to get more weight over the rear tires.

This allows us to have a heavier screed to have better initial density on the mat, thereby requiring our customers to make fewer rolling passes. This results in more uniform density as well as improved rideability.

### **How about other features?**

Regarding operator features, you can run all the functions of the tractor and screed from the operator's console, so it potentially requires fewer people for less time to operate the basic functions.

We went to great lengths to design the fumes control so you will have full view of the augers from the operator's station. Most of the competitors have an obstructed view of the augers, while operators want to have a full view of the head of material on the augers.

Our optional AWD (all-wheel drive) provides more traction and theoretical pull force for a wheeled machine on a hard surface than a track machine. All front wheels have power assist, which theoretically gives you more tractive effort than a track machine because you have more concentrated load on the ground.

This would be of value when a wheeled machine is running with a full head of material on the screed, paving wide, or paving on slippery tack going uphill. It would give you a lot more traction in those cases.

And our Modulated Steer Assist (MSA) pedals give the operator more mobility to navigate the paver around a tight turning radius or around corners. The paver and screed can do more



*Chambersburg, Pa. plant was built in 1996 and is state-of-the-art*

work with less hand work by the crew. It's an option on all the wheel models.

### **Will all Vögele German products be available through your channels?**


Vögele America will be responsible for sales and support of any Vögele product sold in America, whether it's an asphalt paver, or a Novachip machine. That being said, the marketing initiative is not to sell Vögele pavers over here. But if a customer had a unique need, by all means we can and will bring a Vögele machine to satisfy his job requirements. There are several Vögele pavers in the U.S. that were sold by Wirtgen America before the organization of Vögele America.

### **What kind of future do you see for special applications like Novachip?**

These applications will grow as people look for more cost-efficient ways to build and maintain roads. Value added, proprietary products such as Novachip are becoming a growth area (see *Vögele Paver Heart of Premium Asphalt Surface Treatment*, Winter 2000, pp 18-19).

### **What kind of future do you envision for Pro Pav?**

As we enter the next phase of our evolution we are part of Wirtgen America Inc., a proven leader in the asphalt recycling and soil stabilizer business worldwide. We can leverage a lot of Wirtgen America's success in getting our name and product out on the highways of North America. We see an accelerated growth in North America that we can enhance with Wirtgen's quality reputation.

Our full product offering is very attractive and will help contractors be profitable, and that bodes well for us and them. We look forward to bringing this message to our customers this year and in 2002. 

*what asphalt contractors*



*dream*



*Vögele ProPav Series  
made in the U.S.A.*

*Wirtgen  
milling - cold recycle*

*Hamm  
soil - asphalt compactors*

## *Wirtgen's team delivers*

*The Wirtgen Group's recent acquisition of Global Asphalt, Inc., of Chambersburg, PA, completes the worldwide offering of technically advanced paving products for constructing and maintaining highway infrastructure systems.*

*With unbelievably high quality standards and customer satisfaction nobody else can match, Wirtgen will reshape the way you look at high performance roadbuilding equipment.*

*Wirtgen - setting the standard for performance and value throughout the world.*

**VÖGELE**

*Paving Your Future*

Vögele America, Inc.  
Chambersburg, PA  
(717) 264-3200  
[www.pro-pav.com](http://www.pro-pav.com)



*Winning by Design*

Wirtgen America, Inc.  
Nashville, TN 37013  
(615) 501-0600  
[www.wirtgenamerica.com](http://www.wirtgenamerica.com)



*Ground Pounding Performance*

Hamm Compaction Division  
Nashville, TN 37013  
(615) 501-0600  
[www.hammcompactors.com](http://www.hammcompactors.com)

# Wirtgen, Hamm And Pro Pav Join For I-40 Rebuild



12.5 ft. cold milling preceded paving and compacting with Wirtgen Group products

*“The Pro Pav 1110 WB is an excellent machine, we really like it. I like the electronic system, the auger system and the screed. It’s operator friendly. It has ridability. It’s a nice, all-around paver.”*

For one of the first times under the Wirtgen Group ownership structure, in summer 2001 all three product sectors of Wirtgen Group were represented in a major Interstate highway reconstruction project.

A Wirtgen W 2200 cold milling machine with 12-foot cutter head — in tandem with a Wirtgen 1900 DC — joined Hamm HD 130 and HD 90 asphalt compactors, and a 1110WB Pro Pav asphalt paver from Vögele America Inc. to collaborate on a major project under the aegis of Hoover Inc. Highway Construction Division, LaVergne, Tenn.

Their mission: Mill and overlay 10 miles of dual east- and westbound lanes of I-40 east of Nashville, Tenn.

“We cold-planed 2 inches off the inside shoulder, the main line roadway, and outside shoulder, for an overall width of 38 feet,” said Frank O. Marcy, construction manager for Hoover. “We accomplished the cold planing with the 2200 running in tandem with the 1900 DC, which we used to cut off the inside shoulder.”

A special provision on the project required that Hoover replace any cold-planed areas that same day. “Traffic is not allowed to run on a cold-planed area,” Marcy said.

“Typically,” Marcy said, “on the left lane — the fast lane — we’d run the 2200 and take up the entire 12-foot lane. The 1900 DC would follow, cutting off the inside shoulder. And we’d come behind that with the Pro Pav paver and place with modified hot mix asphalt and the restripe and open to traffic that same day.”

The 1900 DC did trim work on ramps as well. “But the 2200 did the lion’s share of the work, taking up both right and left hand lanes,” he said. “The paving train followed about a thousand feet behind the milling.” It would place 1.25 inches of driving course (compact-ed) and 2 inches of intermediate course (compact-ed).

Following the intermediate course over the milled areas, Hoover was placing a friction or surface course, containing antiskid aggregate. A material transfer vehicle (MTV) was used to feed the 18-ton hopper insert of the Pro Pav asphalt paver.

“Some of the machines we see won’t accommodate that,” said Willie Sidwell, Hoover paving foreman. “But Pro Pav has a heavy-duty design for the front end of the paver as a standard feature, and it handles the insert with no problems at all.”

Work on the project was to continue into November. “We expect to place about 140,000 tons of asphalt on the whole project,” Marcy said.



*Hamm HD 130 provides initial compaction of mat*



*Pro Pav 1110 WB paver followed milling by W 2200 and W 1900 DC*

### *About the HD 90 and HD 130*

The Hamm HD 90 has a working weight of 20,100 lb., with a drum width of 66 inches, while the HD 130 has a weight of 30,100 lb., with a width of 84 inches.


These articulated combination rollers offer features that set Hamm apart from all other rollers, such as

- Low profile
- Excellent visibility to both drums
- Excellent visibility to all spray nozzles
- Unmatched industry curb clearance (27 inches/700 mm)
- 180-degree swing around and swiveling operator's seat, a Hamm exclusive
- Dual joy stick controls for travel and vibration, another Hamm exclusive
- 3.5-inch drum offset to either side for pinching joints
- Tilttable operator's compartment for easy service access
- Emergency braking system, and
- Maintenance-free articulated steering system.

### **Evaluating The Pro Pav**

Marcy and other Hoover personnel were pleased to get a chance to certify the performance of this new asphalt paver from Pro Pav. "It's an excellent machine, we really like it," Marcy said. "I like the electronic system, the auger system and the screed," Sidwell said. "It's operator friendly. It has rideability. It's a nice, all-around paver."

Similarly, the Hamm roller was being evaluated on its merits. "With 92 percent compaction passing, we're getting 93 percent and higher after two passes, one vibratory and the other static," Sidwell said. "The front HD 130 breakdown roller was getting about 90 percent compaction, and the HD 90 roller was an intermediate between the pneumatic finish roller. All the pneumatic roller does is get your marks out."

The Hamm rollers are ahead of other rollers Hoover has owned, Marcy said. "I guess it's the way they're made. The vibratory systems appear to be better than other rollers we've used in the past." 

# Contractors Affirm: “Old 1900s Never Die”



McCourt's Dave Harris with Type III cutter

*“Our philosophy is that we will maintain and upgrade a machine, customizing it to our requirements. When we maintain a machine we keep it in new condition, and even upgrade it and make it better than a new machine for our purposes. We keep it at that level for the life of the machine.”*

Michael Bockrath, BOCA Construction

While “Old 1900s Never Die” may not be entirely true, it’s clear that the longevity built into Wirtgen products like the 1900 series is benefiting owners with longer-than-expected life spans and the improved cash flow resulting from a reliable product.

Design elements such as bolt-on cutter housings, robust drum construction, single-source (not aftermarket) bolt-on tooth holder systems, bolt-on kicker paddles that eject material onto the conveyor belt, and hardened steel in the cutter housing, all come

together to bring long life to all Wirtgen machines, including the 1900 series.

### **1900 With 9,800 Hours**

A 1900 DC with over 9,800 hours has served McCourt Construction, Akron, Ohio, since April 1993, said Mike Reischman, shop superintendent, “The key is the maintenance practice of the company,” Reischman said.

Every 300 to 400 hours oil sampling is conducted, along with inspection of all planetaries, the drum and bearings, he said. “If we see something’s going to fail we replace it,” he said. “We just updated our drum last year from [an 8,500-hour] Wirtgen Type II drum to a Type III, and the operator and ground man like it even better.”

While he now works in the shop, Reischman served as ground man on this machine for six years. “I was impressed when they first demo’ed the machine,” he said. “For a company we never heard of before, I was impressed by the depth of its cut — taking 10 inches and more — and the sales presentation by [national

sales manager] Jeff Wiley.

“We’ve never touched some of the parts,” Reischman said. “Much of the original equipment is on the machine. We’ve never touched the hydraulic systems, other than a motor on the track drive. But the main pumps are still original.”

### **Nearly a Decade Old**

“Our oldest 1900 was acquired in 1992,” said Dan Gallagher, vice president, operations, Gallagher Asphalt Corp., Thornton, Ill., in south suburban Chicago.

“This machine has a total of about 7,700 hours and typically we’ll use it for grind-and-overlay, patching projects and interstate work,” Gallagher said. The machine has a 6-foot-3 inch (1.9 meter) drum. Gallagher also has a 1900 DC bought in 1998. “A grinder is an abused piece of equipment,” Gallagher said. “All that vibration is tough.”

“Our Wirtgen dealer, Finkbinder Equipment Co., [Burr Ridge, Ill.] says our older 1900 DC has more hours than any [of the 20] other units they’ve been associated with [in the northern Illinois region],” said Jim Trost, superintendent of operations at Gallagher. “We do major maintenance off-season during winter, and regular preventive maintenance using a computer-based PM system on a cumulative hourly schedule.”

### **8,800 Hours Since 1993**

BOCA Construction, Norwalk, Ohio, has been using a 1900 Combo since 1993, and by November 2001 had logged over 8,800 hours. “It’s just a young pup,” said Michael J. Bockrath, president of BOCA, a prominent milling subcontractor. “It’s done extremely well.”

The secret is keeping up with main-



Gallagher's 1900 DC has 7,700 hours



BOCA's 1900 Combo has 8,800 hours

tenance, Bockrath said. "You can't let things slide. The nature of the business is self-destruction, and you've got to stay with your maintenance program."

"If we get into a questionable situation we'll rebuild the part entirely, because as a subcontractor we strive to have 100 percent uptime for our customers," Bockrath said.

"There are a lot of people who will buy a milling machine and trade it in three or four years," Bockrath said. "Our philosophy is that we will maintain and upgrade a machine, customizing it to our requirements. When we maintain a machine we keep it in new condition, and even upgrade it and make it better than a new machine for our purposes. We keep it at that level for the life of the machine." In addition to this veteran, BOCA has two other 1900s and two Wirtgen W 2000s.

### **Type III On Competitive Machines**

From its headquarters in Columbus, Ohio, Coady Construction is using Wirtgen Type III cutters on four CMI milling machines, three 800/7s and one CMI 525/7.

In 1995 Wirtgen America convinced owners Kevin and Brian Coady to try Wirtgen Type II cutters in their CMI machines. The two 800/7s had 800 hp; later the horsepower was increased. They were very pleased with the results compared to the original CMI drums. Kevin Coady's machine logged 6,500 hours and Brian's 7,200 before they needed replacing, and they now have four Type III drums, three in CMI 800/7s, and one in a CMI 525/7.

"You should go the extra mile and purchase a torque wrench and torque them properly," said Brian Coady. "Then you virtually have no problems. It is clearly the best cutter system out there. We like the W-6 cutter bit also; across the board we use it 80 percent of the time. It really performs better than anything we have tried."

Coady milling foreman Mike Burkhart said he has worked with weld-on drums, bolt-on, and Wirtgen cutters, and maintains the Type III has been the best by far. "It's the best on the market right now," he said, adding the Type III fast change design meant tooth changes in half the time as other systems.

With Wirtgen's new HT3 Type III tool holder system, the

contractor can benefit from simplified ordering (with only one standard upper part), longer service life due to optimized support and fixing on the bottom part, optimized shank form with even more accurate positioning, and modified screw without limiting stop for even easier handling.

### **Mississippi Marvel**

In Mississippi, Warren Paving, Inc., Hattiesburg, uses two veteran 1900 DCs to perform local milling, and uses the two in tandem when full lane removal is needed.

His oldest, a 1900 Combo, was acquired in the mid-1990s and has several thousand hours. It has a 6-foot cutting drum and a combo cutter option that enables easy field or shop changes to cutting widths of 24, 36, or 48 inches. Warren's other 1900 DC has a 6.5-foot cutter width only.


"We've never had a problem with them," said Lawrence W. Warren, president, "I was very apprehensive when we bought them. We knew we could not just run across the street and get parts if we needed them."

But fortunately, downtime has never been an issue. "We haven't had any major or significant downtime with the machines, although we are careful to maintain them. The performance of the machines is fantastic. The machines suit me fine; for my operation they're just right. I would recommend them to anyone."

### **Never Replaced Pump**

Machines other than 1900s are attaining long life spans. For example, Colorado's Alpha Milling Co., Inc. is operating a 1994 Wirtgen W1000 and it's performing every day.

"It has run like a champ," said Larry J. Ware, president of Alpha. "I've hardly had any problems with it. It's made me good money. It has a lot of hours, probably 5,200, and it runs just fine."

Ware took note of the machine's conveyor. "I don't know how many times the conveyor belt has rotated, but the pump on the conveyor has never been replaced," Ware said. "I keep telling myself, one day I'm going to have to replace that pump. But I never do." 



**Mother Nature's Toughest**



**Milling's Toughest**

**When original parts won't cut it, get the Rhino.**

Wirtgen has learned from 35 years of experience what it takes to be the toughest and they understand that not all manufacturer's original parts wear well. For this reason Wirtgen developed the Rhino System - for your especially punishing jobs. The Rhino Type III Tooth Holder is a non-weld, severe duty cutting system specifically designed for today's high horsepower milling machines and reclaimers. This Rhino Cutting System has proven to be significantly more durable and much more cost effective than any other design in the world.

The Rhino Cutting System is easy to obtain through Rhino Parts, an aftermarket lineup of cutting drums, cutting teeth, track pads and conveyor belts. Rhino Parts offers a full complement of parts to fit **all makes and models of profiling and milling machines.**

Call us today - we'll deliver the parts that even Mother Nature would call tough. **RHINO PARTS.**



**WIRTGEN AMERICA**

*The Obvious Choice*

6030 Dana Way • Nashville, TN 37013

615-501-0600 • fax 615-501-0691

[www.wirtgenamerica.com](http://www.wirtgenamerica.com)

# GENERATIONS AHEAD



## The HD Series asphalt compactors by Hamm

- Compact – low profile design
- 3 1/2" hydraulic rear drum offset
- 180° rotating operator's seat
- Dual – seat mounted controls
- Unequaled visibility to drums and work area
- Primary and secondary water systems
- Ground level serviceability
- Industry leading drum performance
- Available in 59, 66, 78, 84 inch drum widths

HAMM, the leader in compaction technology since 1878; the first compactor manufacturer to replace a steam engine with diesel, innovator of all wheel drive – all wheel steer, introduced oscillatory technology, winner of multiple design and innovation awards... **continues the legacy of design excellence, innovation and performance leadership.**



**Wirtgen America**

HAMM Compaction Division • 6030 Dana Way • Nashville, TN 37013 • (615) 501-0600 • Fax (615) 501-0691



# Hamm Compactor Does Work Of Two At Midway Airport

The first 3000 Series base compactor delivered in the United States — a Hamm Model 3412 owned by Walsh Construction — was doing the work of two machines in bringing stone base to 100 percent compaction to meet Federal Aviation Administration (FAA) specs on a major airfield project.

The Hamm was hard at work preparing bases for concrete runway, taxiway and apron structures for the airfield reconstruction and terminal expansion of Chicago Midway Airport in summer 2001.

"The contract calls for 7 inches of CA 6 Grade 8 stone base on top of a dirt subbase," said Tony Charielle, project superintendent, heavy/highway, for Walsh. CA 6 is a 3/4-in. crushed limestone aggregate with fines. "So we prepared the subbase with our dozer, at which time the Hamm roller would come behind it and get compaction on the soil."



Kevin Doogan, operator for Local 150, compacts stone base on Chicago Midway Airport airfield

## **Cut To Subgrade**

For the soil subgrade, Walsh would cut to subgrade and perform a proof roll by driving a loaded truck on it under the gaze of FAA inspectors. "If the soil deflects more than a half inch, we are directed to either undercut it anywhere from 6 inches to 2 feet," Charielle said. "If we do undercut it, we call for PGE [porous granular embankment, 6-inch stone down to fines] material for the hole, compact it with the Hamm 3412, and put CA 6 on top of that."

That material is 8 inches of stone, to be compacted to 7 inches. Then 6 inches of cement treated permeable base [CTPB] would be placed, followed by 17-inch-thick portland cement concrete structures above.

"We're mandated to have 100 percent compaction so we water our stone constantly, and we've had no problems at all achieving compaction with the Hamm," Charielle said.

A competing roller had been used earlier in the project, he said. "We could get 100 percent with it, but it took a lot more

effort than the Hamm," Charielle said. "With the Hamm, we hit it a few times and it would be there."

In fact, the Hamm 3412 was doing the work of two other units on the Midway project. "We got rid of all the other rollers we had," Charielle said. "It replaced two compactors."

That's because it only would take two or three passes with the Hamm 3000 Series unit to reach 100 percent compaction, Charielle said. "We could do that with high frequency running on the roller," he said. "With the other machine, it all depended on what the subbase was underneath. If we didn't have a really good subgrade and dirt, we had a lot more difficult time. With the Hamm, it really didn't matter."

## **Boosting Productivity**

Being able to greatly reduce the compaction time with a product like the Hamm 3412 means a lot to a contractor like Walsh, which was undertaking the Chicago Midway airfield reconstruction on a very tight schedule.

"Last year they did an area as large as the 5-acre concrete area in front of us, and it took them all fall to do it," Charielle said. "We did an area twice that big in a month, and it had a lot to do with the Hamm roller."

Gesturing behind him, Charielle said "We did this 2-acre area back here in about a month, because the Hamm helps," he said. "I've never achieved compaction as easily with another machine as with this one."


Unpredictable subsurface conditions also complicate construction, but the Hamm compactor helps keep the project on schedule. "Seventy-five percent of one area we hit on the north side required a 2-foot undercut," Charielle said.

"Having this roller definitely helped for that work," he said. "We took the Hamm down to better ground, and we started putting the PGE in and hitting it with the Hamm roller," Charielle said. "We were getting compaction on the sub-base which we didn't even need, but could attain with the Hamm. That made the owners — the City of Chicago — pleased with the product."

### **Scuttlebutt Leads To Hamm**

For Walsh's Charielle, Hamm's reputation in asphalt compaction had preceded the 3000 Series. "I had seen them with asphalt crews, but I didn't know they made one for stone," he said. "One of my superintendents had come across the brand and asked me to start inquiring to find someone who carried it, and see if we could get someone out here."

Walsh wound up with the 3412, an 84-inch-wide, single-drum vibratory compactor with operating weight of 12 tons. "Our dealer, McAllister Equipment, said it was the top-of-the-line model, what you should have in this situation," Charielle. "We didn't argue; they know their product better than we do."


Once in its hands, Walsh Construction had no qualms about purchasing the new 3000 Series model. "The reason we purchased it was that we were getting compaction with it, and it didn't matter what it cost," Charielle said. "If this was going to get us what we needed in this time frame, that's what we wanted." 

## **Multiple Hamms Compact O'Hare Runway Asphalt**

In a critical airport application done at night and under a tight schedule, four Hamm HD 130 asphalt compactors supplied by McAllister Equipment Co. compacted fresh hot mix asphalt on Runway 14R-32L at Chicago O'Hare International Airport.

The HD 130 has a weight of 30,100 lb., with a working width of 84 inches, and were being operated by paving contractor E.A. Cox Construction Company.

This mill-and-fill resurfacing of O'Hare's major runway would start each summer night after 10 p.m., when the runway would be closed and equipment could begin. Paving would cease about 3 a.m., giving the mat enough time to cool before aircraft could land at daybreak.

The entire 206-foot width of the runway (shoulder-to-shoulder) would be milled, broomed, and then paved, and compacted by the Hamm rollers in 550-foot increments, about 1,500 tons each night. 



*Three of four HD 130s await go time for O'Hare night work*



*Paving would cease at 3 a.m. to permit runway to cool down*

# All-Wirtgen Rhino Teeth Give Alpha Competitive Edge



Wirtgen Model 1000 DC mills  
South Yosemite patch cuts

A major cold milling sub-contractor in Colorado has moved up to 100 percent Rhino replacement teeth from Wirtgen America, and it's giving him longer term performance that's making a big difference in equipment uptime and on the bottom line.

Alpha Milling Co., Inc., Denver, specializes in local road and arterial milling, but does not undertake major Interstate work. In summer 2001 Alpha was running two W 2000 machines, two 1900s, an old 1000 DC and a W 600.

Alpha was featured in a previous issue of this maga-

zine (see *Tight Quarters In Historic District Can't Stop Alpha*, Summer 2000, pp. 8-9). What's different is that Alpha's workload has increased, and that the company is meeting that expanded workload by using all-Wirtgen sourced replacement teeth.

"I've been studying for years as to who has the best teeth," said Larry J. Ware, Alpha president. "It's hard to tell because you need to get two machines on the same job with different brands of teeth. Instead you watch them on and off, and as the months go by, you try to determine how long they last."

Despite his study, it was his own workers who finally pushed him toward Wirtgen teeth.

"I'd tried them all, but this summer I've gotten the best input from my own guys," Ware said. "This year I ordered in a pallet of Wirtgen teeth. The guys tried them and said 'My gosh, they're lasting twice as long as the other teeth'. I didn't believe them at first, but they told me, get the Wirtgen teeth. Now I'm strictly Wirtgen teeth."

Longer-lived teeth also mean less work in the field for crews. "They like the teeth because they don't have to change them as often," Ware said. "It's a piece of work to get down and change them every day. If they can put in a new set and not have to change it for a couple of days, they're tickled to death."

Ware found his initial order lasted longer than he expected. "The initial pallet lasted forever," Ware said. "So I purchased the largest quantity amount and received a major discount. I'll go to the middle of next year with this order, they're lasting so long."

## **Quick Change Holders 'Way To Go'**

In Arapahoe County, Colo., on South Yosemite Street, Alpha was using its 1000 DC and W 600 to mill out cracks for future patching prior to asphalt overlay by its prime contractor, Asphalt Paving Company.

"We are milling out cracks, 6 inches deep, either 40 or 20 inches wide," Ware said. "We started out with non-Wirtgen teeth, but the asphalt is really hard and it just wasn't grinding good at all. I put all-new Wirtgen teeth on and boy, you could tell the difference just like that. It really made a big difference."

But the 1000 DC came before the advent of Wirtgen's Quick-Change Tool Holder system. Now when the time comes to change teeth, it can be done in a flash. Elsewhere on South Yosemite Street, Alpha was using a W 2000 equipped with Quick Change Tool Holders to speed cold

milling along.

"The Quick Change system was not out when I bought the 1900 DC," Ware said. "If it was I would have bought it, because Quick Change tooth holders are the way to go.

"But now, with the Type III tooth holders from Wirtgen, the first three years I hardly changed any tooth holders at all with my 1900s, unless I would break them," Ware said. "They will wear after a while, and I'm surprised I got through three years with them. Last year I replaced them and they make the Wirtgens work like a brand new machine, providing a fine milling pattern."

For Larry Ware and his field workers, the choice is clear. "You got to go with the teeth that are making you the money," Ware said. And that means Wirtgen.



W 2000 mills in Avopahoe County, Colo.

### About Rhino Rapid Change Tool Holder Systems

Wirtgen America's Type III HT3 rapid-change tooth holder system from Rhino Parts will give you lower operational costs, square yard after square yard.

The first generation of quick-change tool holders from Wirtgen proved its good value in practice and has been refined to yield the new HT3 Type III tool holder system. The main features of this new generation include simplified ordering — only one standard upper part — longer service life due to optimized support and fixing on the bottom part, optimized shank form with even more accurate positioning, and modified screw without limiting stop for even easier handling.

There are many system advantages. Cutting and welding work is no longer necessary when repairing damaged tool holders, for example, after hitting a manhole cover. Fast and economical exchanges of worn tool holder upper sections while on site are enabled.

There can be substantial cost savings because the drum can be serviced with minimal seasonal downtime. The milling drum can remain installed in the machine, and welding

matrixes to position the picks are no longer necessary.

Type III offers three major components to ease your tooth change efforts. The Rapid-Change Upper Section is an extremely sturdy component accommodating the cutting tool or pick. As this component is not welded on, but instead is a socket connection, a much harder material that is more resistant to wear can be used. This section is identical on all deep-cut (DC-series) Wirtgen milling machines, thus substantially reducing inventory costs.

The Rapid-Change Lower Section comprise cast components welded to the milling drum, so their flanks form a material-conveying helix. As the upper section is simply slotted into the lower section, precise positioning of the cutting tool is always guaranteed.

The Retainer Screw head is protected inside a recess at the rear of the lower section to ensure that the upper sections remain tight. These easily accessible retainers can be tightened with a conventional torque wrench, assuring a permanent hold of the upper section.



Wirtgen 1000 DC unit drum is 40 inches wide and accommodates approximately 145 W5 or W6 teeth from Wirtgen America



Wirtgen W 2000 unit drum is 6-foot-7 (2 meter) in width with Type III W6 teeth from Wirtgen America

# New Rumble Strip Attachment Triples Productivity

A new rumble strip attachment from Wirtgen has tripled the speed of rumble strip installation, greatly boosting productivity and profitability due to increased quantities of scale.

Five years ago, Wirtgen America began marketing a new rumble strip attachment for the W 500 that ran at 60 feet per minute. It did an excellent job cutting rumble strips in shoulders at one cut per second.

Wirtgen took that same technology to the W 600 and was able to get an incrementally faster cut speed, but results were less than optimal, because it caused movement of the milling machine, tiring the operator.

Last year Wirtgen America decided on a new design which would permit the milling machine to remain stable while the rumble strip cutter would move up and down. The result is Wirtgen's new Rumble II attachment, available now for the W 600 model.

## Unit Triples Production Of W 500

"We completely redesigned the process," said Stu Murray, president, Wirtgen America, Inc. "The new attachment will cut at 180 feet per minute, and that will permit contractors to boost productivity and income." That's triple the production of rumble strips cut with the W 500.

"Ten years ago, cut rumble strips cost from \$1.50 to \$2.00 a foot, and today we can see work for as little as 15 cents a foot or less," Murray said.

Rumble II also is more versatile in its orientation to the shoulder. "You can cut rumble strips on the left or the right sides of the machine," Murray said.

"You also can remove the cutter head of the machine and install a 6-foot-wide fine texturing head, which will permit a contractor to texture asphalt or concrete up to one-half inch deep," Murray said. "This latter feature is ideal for providing skid resistance to bridge decks, intersec-



Rumble II cuts at 180 feet per minute

tions and other paved surfaces. It is the ideal bump-cutter.

"Previously, to get this kind of performance, a contractor would have to obtain a 400 to 800 hp machine, cutting 3/8-inches deep," Murray said. This can cut the cost of grooving and grinding in half or more, he added. "And it has the added mobility of a rubber-tire machine."

This attachment will not have the land plane leveling feature of a diamond grinder, but is automated with long grade skis to accomplish the same effect, Murray said.

## Milled-In Strips Preferred

"The state of the art today is milled-in rumble strips," Murray said. "In some states doze-off accidents have been reduced by 80 percent with milled-in strips. And the only time you can install rolled-in strips is when you put down new asphalt. I'd have to wait until a road was repaved in order to save someone's life. That's not a good situation."

For more information about Rumble II, contact Wirtgen America Inc. or your regional sales manager.



Rumble II moves forward at brisk pace

# RACING: Wirtgen, Hamm Drivers Win Big

Drivers of cars co-sponsored by Hamm Compactors and Wirtgen America figured big in 2001's World of Outlaws Sprint Car racing.

Danny "The Dude" Lasoski, driver of a Hamm-sponsored Sprint Car, claimed his first Pennzoil World of Outlaws championship with his car No. 20 owned by NASCAR driver Tony Stewart. Lasoski won the title — awarded on a cumulative points basis — in the closest points race in Outlaws history.

"We felt that the Tony Stewart-Danny Lasoski duo would bring a lot of excitement to our customers and our employees," said Wirtgen America president Stu Murray. "We weren't disappointed."

"Our good friend Stu Murray [is] a great supporter," Lasoski said. "He's an avid Pennzoil World of Outlaws Series supporter and we appreciate that very much."

As an added bonus to the 2001 Outlaw Series, the driver of the Wirtgen

America-sponsored car — Jeff Shepard — was named the Pennzoil Series' Kevin Gobrecht Rookie of the Year. Shepard drove the Forbrook Motorsports No. 5 Maxim. "I have to thank Wirtgen, Maxim, Goodyear and Guy Forbrook for giving me the opportunity to race," Shepard said. "It was a really tough year, but it worked out in our favor and we finished in the top 10 as well as winning rookie honors."

Murray added that Wirtgen Motorsports activity has earned four National Championship titles in the last eight years, three with Kinser Racing, and the fourth with Lasoski-Stewart Motorsports. Wirtgen also has won three Knoxville Nationals in the same period, which is the Sprint Car "Super Bowl" event held for one week every August in Knoxville, Iowa.

More information about Sprint Car racing is available on the Internet at [www.worldofoutlawsracing.com](http://www.worldofoutlawsracing.com).



*Danny Lasoski is interviewed on live TV while talking to car owner, Tony Stewart, who was in North Carolina for a NASCAR Winston Cup Race*



*At Las Vegas Motor Speedway, Wirtgen-sponsored World of Outlaws Sprint Car driver Jeff Shepard gives thumbs up; he was honored as Rookie of the Year*



**Wirtgen America**

Wirtgen America, Inc.  
6030 Dana Way • Nashville • TN 37013 USA  
Phone (615) 501-0600 • Fax (615) 501-0691  
[www.wirtgenamerica.com](http://www.wirtgenamerica.com)

PRSR T STD  
U.S. POSTAGE PAID  
ANTIOCH, TN.  
PERMIT NO. 205