Issue 1 2012

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CAT

New Asphalt, Soil Compactors Unveiled

Rollers built with customers' input



CAT

100

Speedy Work on Country Roads

Paver's pace helps Czech project advance





Lieven Van Broekhoven Worldwide Sales and Marketing Manager

Global Footprint

ur participation in three major trade shows on three continents in 2012 underscores the global footprint of Cat Paving Products. Representatives from many Cat Dealers and from the various manufacturing facilities will be on hand at Intermat 2012 in Paris, at BAUMA in Shanghai, and at M&T Expo in Sao Paulo. (See story on page 16.).

Caterpillar is accustomed to being among the largest exhibitors at all levels of equipment shows, but at Cat Paving we've subscribed to more space than ever in 2012 in order to display new models in several product lines. These are not warmedover models, renamed due to engine upgrades. There is new technology on display in every product line.

Take soil compactors, for example. Up until today, the intelligent compaction technology available to customers has been limited, both in application range and in terms of what the technology measured. Our innovative new technology, Machine Drive Power, offers customers more versatility and a more relevant measurement—something you have been asking for. Suddenly, technology can help create efficiencies and great profitability in a wide range or applications, not simply under a certain set of ideal parameters. That is what technology is supposed to do.

Take the quickest of looks at our new rollers and it's clear we aren't unveiling new models simply because a certain number of years have passed on the calendar. We are bringing to market new products and technologies that impact your jobsites.

These products, of course, will be on display at the trade shows. If you go to any of the big events this year, look me up. I'll be there. We'll talk Cat technology.

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Speedy Work on Country Roads

Paver's pace, travel time add efficiencies

The rural roads near Brandýs nad Labem, in the heart of the Czech Republic, may not be as heavily traveled as their counterparts in Prague, about 25 km (15.5 miles) to the southwest, but they are nevertheless crucial pipelines to the rural and agricultural areas of the country. An assessment by regional authorities indicated that these roads were in need of repair. That led to cold planing and paving work on a series of rural roads near Brandýs nad Labem.

Regional authorities had two key requirements: The roads must stay open during the work because many are the only viable option, and the work must be completed quickly (five days for one particular stretch of road) to permit usual traffic patterns to resume as soon as possible.

USK s.r.o., headquartered in Mladá Boleslav, was hired to handle the regional road project. The key for the firm was transferring both the knowledge and the equipment often used in urban settings to the rural project, said Ing. Jan Horák, the company's chief executive officer.

The region

Brandýs nad Labem-Stará Boleslav is the town nearest the roadwork. The town—a merger of the onceindependent towns Brandýs nad Labem and Stará Boleslav—is in the Czech Republic, in the central Bohemian Region, and technically rests within the metropolitan area of Prague. The origins of the towns date back to the 13th century.

Brandýs nad Labem-Stará Boleslav has a population of about 15,000. It remains a town with a rural feel to this day, despite its proximity to Prague and the major thoroughfares between the two. Smaller roads, meanwhile, reach out from Brandýs nad Labem-Stará Boleslav to the rural areas. This is where the work took place.

The challenges

The recently completed five-day section is 4200 m (2.6 miles) long and 6 m (20') wide. Since half the road was required to remain usable, USK Mladá Boleslav needed a paver capable of working at a width of 3 m (10'). This paver also had to be capable of laying down 800 metric tons (882 U.S. tons) of asphalt per day for five days. That meant the crew and paver had to achieve good production levels.

Working at the 3 m (10') width, a Cat[®] AP555E Asphalt Paver was assigned to handle the paving. The open road also meant the crew, particularly operators, had to watch out for traffic. The paver's platform helped with this challenge. The seats could easily be turned for better visibility. Dual control stations enabled operators to switch seats without taking their eyes off the important work at hand.

The ability to easily work from either side of the operating platform also helped keep the paving train working at a quick pace, as did the grip of the Mobil-Trac[™] system. The tracks grip the surface and thus provide both excellent maneuverability and speed that lead to outstanding quality and pace, said Jiří Široký, Sales Manager of Road Technology at Phoenix-Zeppelin, the local Cat Dealer. "The Cat AP555E track paver easily moves over soft base materials and the operator can easily maneuver it when paving," adds Široký.

Crews worked at a pace of up to 8 m (26') per minute. They consistently reached the high end of the production target. This is a very quick pace considering the mat thickness of 50 mm (2"). It requires all elements—trucking, paving and compaction—to be in sync.

Speed when not paving, too

The paver worked for a half day in a single direction, then returned to that day's starting point and laid down the second half of the road with a longitudinal joint. Time is lost while returning to the starting point, yet the AP555E again proved to be efficient.

Whereas the traveling speed of other machines with track undercarriages is 4 km (2.5 miles) per hour, the medium class AP555E paver can travel up to four times faster. "Faster traveling speed means fewer delays during work, which is then reflected in the work results in the form of lower time requirements for the completion of a job," said Široký.

The AP555E was also enhanced by a 190 L (50 U.S. gal) fuel tank, which eliminated the need for frequent refueling and minimized work delays. "We only had to refuel every second day," said Horák. "It's a very important advantage. With the old paver (which was not a Cat machine) we had to refuel every day."

Planning for production

Planning played a key role. USK Mladá Boleslav in particular focused on material supplies, counting trucks and loads to ensure consistent delivery of asphalt. The steady delivery kept machines moving consistently, a crucial step in segregation prevention.



 Properly planned compaction efforts are crucial to speedy paving.



 Multiple sensor readings helped ensure a smooth mat.

USK Mladá Boleslav determined the total volume of material. They factored in a project length of 4200 m (2.6 miles), multiplied by the 6 m (20') width of the road, plus exits and entrances, at about 4000 metric tons (4,400 U.S. tons). The deadline of five days meant the firm would have to place about 800 metric tons (882 U.S. tons) per day.

Each haul truck had a capacity of 30 metric tons (33 U.S. tons), and had to travel 40 km (25 miles) from the plant to the jobsite. A round trip took approximately 90 minutes to two hours, equating to four round trips per truck per day. USK Mladá Boleslav then calculated it needed six trucks to keep the paver moving steadily.

The mix had a stone size of 4-8 mm (0.15-0.30"); it arrived at a temperature of 160° C (320° F) and was placed at 145° C (295° F). The material was enddumped into the paver.

Segregation prevention

A number of precautions were taken to prevent segregation. Loads were tarped at the plant to maintain temperature. In addition, special focus on the trucking pattern ensured mix arrived at proper temperatures. Four independent sensors on spreader augers and conveyors provided the proper amount of material to the AS4252C screed—electrically heated to help keep the temperature of the mix consistent.

Compaction and completion

Specified compaction values were achieved with vibrating tampers on the paver's smoothing bar, followed by compaction with a Cat CD534B vibratory roller weighing 12 metric tons (13 U.S. tons). The entire job was completed on time and surface smoothness and quality goals were met.

USK Mladá Boleslav, like its parent company H-INTES s.r.o., had already purchased Cat earthmoving machines and compacting equipment prior to the contract, and now is pleased to also



include pavers in its equipment lineup.

"We chose a Cat machine for road paving because it is an established and reliable brand," said Horák. "Phoenix-Zeppelin offered us very good conditions and service. I expect that we should get a full return on our investment in the machine within an acceptable timeframe."

Segregation prevention efforts included tarped loads.





Comfort and Confidence

Full line of Cat Compactors Unveiled



hether you are compacting soil or asphalt, Caterpillar has a new line of equipment that will suit your needs.

Changes to the compactors include more models to choose from. Both Cat Tandem Drum and Soil Compactors now cover virtually all weight classes. No matter the size, the compactors provide a significant comfort boost to help keep operators alert and productive throughout their shifts.

• The redesigned cab has best-in-class climate control and multi-purpose windows.

- The control console and display are integrated with a pivoting seat.
- In addition, the display provides instrumentation data and diagnostics at a glance.

The compactors deliver confidence, too. Improved evaluation tools ensure asphalt compactor operators are reaching proper targets. New technology has created significant improvements in assessing soil compaction, and smooth and padfoot roller operators now can assess more accurately than ever.

CAT SOIL COMPACTORS

Quality—and Comfort, Too

Cat Soil Compactors are more comfortable than ever with their best-inclass climate controlled cab. They also are built for productivity.

- Achieve quality compaction faster thanks to more weight at the drum and best-in-class amplitude.
- The exclusive electronically controlled dual-pump propel system provides exceptional traction and gradeability, and plenty of power for a leveling blade.

- Standard technology such as automatic speed control and auto-vibe maximize functions that enable high quality and uniformity.
- Pad designs include the exclusive involuted, tapered oval-face or the square-face to fit the application requirement.
- Service intervals for the vibratory systems are 3 years/3,000 hours to improve uptime and reduce service costs.
- Hydraulic service intervals also are at 3 years/3,000 hours.
- Tier 4 Interim/Stage IIIB engine utilized.
- Industry-proven pod-style vibratory system delivers unparalleled performance and reliability in a virtually maintenance-free design.

Cat Compaction Control for Soil Compactors

Cat soil compactors feature an enhanced measurement solution in the form of Cat Compaction Control. It provides compaction information that eliminates guesswork and enables the operator to quickly and confidently move to the next job. Two different optional compaction measurement technologies are available: Compaction Meter Value (CMV) or Machine Drive Power (MDP).

- Factory integrated system measures compaction and outputs real-time measurements via the console display unit.
- Can be augmented by adding an SBAS GNSS mapping antenna and a dedicated display unit that enables the operator to visually monitor results, map them to locations and save the data.
- An available RTK GNSS mapping capability provides greater accuracy than SBAS.

Compaction Meter Value (CMV)

 An optional accelerometer-based measurement system for granular soils, only available on smoothdrum soil compactors.

- Functioning while the drum vibrates, it measures deep into the ground, 1.0 to 1.2 m (3-4'), providing a picture of what is beneath the surface.
- Can reveal the location of hidden anomalies (such as buried objects, rocks, clay balls) or areas of poor compaction.

Machine Drive Power (MDP)

- An exclusive technology only available from Caterpillar.
- Indicates soil stiffness by measuring rolling resistance.
- Available on new padfoots, smooth drums and smooth drums with shell kits.
- Functions when the drum is static or vibrating.
- Measures closer to depth of the lifts of materials being compacted, around 30-60 cm (1-2') deep.
- Can be used on all soil types.
- Measures shallow, which provides results that can be correlated with portable measuring equipment such as lightweight falling deflectometers and nuclear gauges.







TANDEM VIBRATORY ROLLERS

Available in All Sizes You Need

A full range of machines sized for virtually any roadbuilding application is available in solid and split drum, helping reduce tearing and other mat defects that can result when turning. Finish work receives a boost with the oscillating hitch design and the ride quality it provides-whether working on level or uneven terrains.

- · Redistributed weight at the drum and best-in-class amplitude help quickly reach densities on both asphalt and other granular materials.
- Vibratory system service intervals are 3 years/3,000 hours for maximum uptime and reduced service costs.
- Hydraulic service intervals also are at 3 years/3,000 hours.
- · High reliability because of robust design.
- Tier 4 Interim/Stage IIIB engine.
- A water spray system with single fill point and high capacity provides a long duration betwteen fills.

Technology to Ensure Compaction Control

• The tandem vibratory rollers can be adjusted to varying surfaces and conditions.

- A single switch automatically matches amplitude with frequency.
- The five-amplitude system provides the needed punch for thick lifts and tough mix designs.
- The Versa Vibe[™] Vibratory System creates a "2-in-1" machine in the CB54B model by enabling lighter hitting at higher speeds, or heavier hitting at slower speeds, while meeting the desired impact spacing.
- Optional Cat Compaction Control provides temperature measurement to keep operators informed. The system can be augmented with GNSS mapping capability, which maps temperature measurements and enables pass count.

Other Tandem Roller Features

- Unobstructed sight lines with 180° seat positioning and ability to rotate 360°.
- · Innovative handwheel steering technology that eliminates the front console and delivers precise control.
- Lighting at the drum surface and edge makes nighttime operation easier.

Call your Cat Dealer for information about the value new Cat rollers can bring to your crew.



TECHNOLOGY

Precision's Role in Profitability, Productivity



Cat[®] Grade and Slope eliminates rework, establishes foundation for success

Precision eliminates costly rework. It ensures crews don't remove excess materials, and incur the associated costs in fuel, hauling and machine life. Precision also impacts the entire life—and cost—of a project by creating the proper foundation on which all subsequent work occurs.

Cat[®] Grade and Slope for cold planers helps deliver that precision. Among the "precise control" benefits of the system:

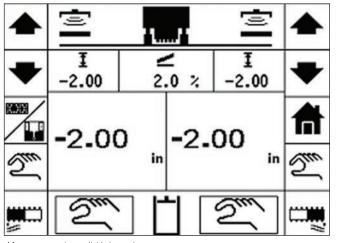
- Typical setup utilizes more data samples than competitive systems, providing a more accurate representation.
- Cross-coupling capability improves machine responsiveness, providing superior surface quality and accuracy.
- Automatic calibration ensures consistent setup and delivers optimal performance.
- An intuitive operator's display makes the technology easy for crews to leverage in real-world, on-the-job conditions.
- Sonic sensors feature five ceramic transducers per unit, each far more durable than foil transducers.
- Contact and wire rope sensors have wide reference ranges, resist heat and wind, and provide clean signals for high accuracy.

The benefits of Cat Grade and Slope don't end there.

Single-source supplier. The Cat system is a perfect match for your Cat Cold Planer. Cat Grade and Slope also enables you to take advantage of all the services available through your dealer—including support and financing.

Increased reliability. Uptime is maximized because factory installed and sealed components are built to meet the rigors of demanding milling applications and are resistant to heat, vibration and moisture.

Call your Cat Dealer to see the Cat Grade and Slope system at work.



Measurements also available in metrics



When Perfection is the Only Option

Crew takes on challenging track, memorial project









T's a beautiful fall day in New England, but no one from the T.L. Edwards crew seems to notice. Their conversation centers on tolerances, paving speeds, split-drum compaction, haul trucks and logistics.

As they talk, one word surfaces, over and over: Perfect.

"This job has to be perfect," says Rob Edwards, equipment manager of the firm based in Avon, Mass. His father, Terry "T.L." Edwards—the owner and namesake—says the same thing. So does foreman Peter Starrett, and members of the crew.

If there is little margin for error most days, there is no margin for error this day. Everything needs to be perfect for this job—and what it stands for.

The job is a running track for Sandwich High School, located on scenic Cape Cod, Mass. Paving a running track has created a need for great precision.

The crew is worried about perfection for another reason—for what the site represents. This day also marks the paving of the base for a memorial to fallen veterans, and in particular Capt. Gerald F. DeConto, a 1974 graduate of Sandwich High School.

DeConto spent his career in the military and died in the Sept. 11, 2001, attack on the Pentagon. His family, friends and the Sandwich community chose to honor their native son by building a new track and football field in remembrance of him and others who served their country. It took years,



The Cat[®] CD54 and CB54 worked next to, but never crossed over, the crown.

but the necessary funds were finally gathered for paving both the track and memorial area.

The school will once again be able to host events—something it couldn't do for the better part of a decade because of the track's poor condition. And those who visit the brand new track also will see the memorial.

That's why T.L. Edwards wasn't just talking about mat deviations when he said, "This job has to be perfect."

Job description

The project actually consisted of three separate paving components. The first was to pave the infield event and memorial area, between the track and what will be the football field. It was essentially a parking lot-type project.

The track comprised the other two components: A 6.7 m (22') wide lift that will be the running track, and an adjacent 3 m (10') wide lift on the outside of the running surface for noncompetitors such as coaches, timers and others.

The project started with fine grading and soil compaction. A paver then made a pass with stone dust to ensure elimination of all deviations, followed by another compaction pass.

Next it was time for asphalt. A Cat[®] AP555E placed a 38 mm (1.5") binder

with a stone size of 19 mm (3/4"). Then a 38 mm (1.5") surface coat was placed, with 13 mm ($\frac{1}{2}$ ") stone.

The project specified a cross slope of 0.75 percent for drainage, but allowed that slope to deviate to a maximum of 12 mm (0.04'). "That's how much room they gave us for grade deviation," said Rob Edwards. "Less than half of an inch around the whole track."

That tight margin led to the use of the Cat Grade and Slope system. "We weren't afraid to go with that new technology because Caterpillar is very thorough when they put a product out," Rob Edwards said. "We know it will work."

Another contractor later applied a thin rubber surface.

The paving

A Cat AP555E Asphalt Paver with an AS3251C Screed began the day by paving the memorial area. That job was handled with ease, but the real challenge was the track. Besides the need for precision, hills limit access to the site—requiring even more detailed logistics.

The surface lift started with a Cat[®] AP1055E Asphalt Paver placing asphalt near a corner, at the "top" end of the oval track. But the paver did not have a strictly horizontal starting point. Instead, the screed and a piece of wood created an angle. (Later, when the paver circled the track, it was able to work to the low point of that angle, then pull the screed in and pave tightly along the angled starting point—and drive off the unpaved, outside portion of the track.)

The AP1055E extended its AS3301C Screed and paved at a width of 6.7 m (22'), enabling the entire running surface to be covered in a single pass. "Working at that width was not a problem," Starrett said. "We've worked at 28' (8.5 m) before."

The paver turned the first corner, and then another. The AP1055E then was joined by the second paver, an AP555E—just before a straight stretch of the track. The standard 2.4 m (8') screed on the AP555E was extended to 3 m (10') and handled the surface outside of the running area. A crown separated the two pavers, and was left intact for drainage purposes. Water on the track would drain toward the inside field, and water on the outside surface would drain away.

The AP1055E, on the inside, moved faster than the AP555E on the outside. In particular the AP1055E gained time as it traveled through turns. When the AP1055E had circled the track, it paved to its starting joint. It drove off the outside portion of the track that the trailing AP555E had not yet paved.

The AP555E then worked its way to its starting point—further along the track than where the AP1055E had started—and eventually backed in to create the longitudinal joint before paving a walkway as it exited the facility. The mix was placed at a temperature of about 149° C (300° F). The trucks remained tarped; heat loss was an issue because the trucks had to arrive at the site, back around the track and line up. The material was end-dumped into both pavers.

The pavers worked at about 457 m (1500') per hour. In other words, it took about an hour for them to pave the track.

Grade and Slope is key

The crew had a tough job, but it was made easier with the Cat Grade and Slope system on the pavers. "We like the way operators on both sides of a screed can see what the other sees," Rob Edwards said. "That's in addition to the accuracy it delivers."

Accuracy was crucial. The slope at the straightaway started at 0.5 percent and transitioned to 0.75 percent for the remaining three turns. The Grade and Slope read off a previously placed and inspected concrete drain for grade.



The project specified a cross slope of 0.75 percent for drainage, but allowed that slope to deviate to a maximum of 12 mm (0.04')

Key members of the Edwards crew relentlessly monitored the results from the screed, using levels to double-check accuracy. Crew members rarely walked on the mat, and when they did, special boot covers helped to increase flotation.

Compaction

The CD54 handled breakdown compaction behind the AP1055E. The roller's offset split drums, and their wider coverage area, maximized efficiency while compacting the 6.7 m (22') mat. The offset drums also provided a tight turning radius without damaging the mat—a key feature when compacting an oval track.

"The CD54 doesn't stretch the mix," Rob Edwards said. "It doesn't push and pull and tear." It's also maneuverable, he said. "It weighs 22,000 pounds (10 metric tons) and handles like a go-cart."

Starrett likes the split-drum roller's versatility. "We can use it when we need a static, and we gain by having vibratory available. It's really a static roller with extra compaction."

A CB54 took on breakdown compaction behind the AP555E. Both the CD54 and CB54 were able to achieve compaction in three passes, with a movement up and back and up counting as three passes. The rollers worked from immediately behind their respective pavers to a few hundred feet back. The compactors worked next to, but never crossed over, the crown. A Cat CB24 did the finishing work.

Victory lap

The machines and crew met the goals. All the experience and attention to detail paid off: Everything was perfect. In a little more than an hour, the crew had moved past the memorial site. Given the requirements, it proved to be the track's first victory lap.



THE CAT[®] PAVER DIFFERENCE

The T.L. Edwards crew didn't hesitate to put two new Cat Pavers—the AP555E and AP1055E—to work on the very sensitive job. The pavers responded as expected, and in many cases delivered added value.

Quiet. "The very low noise level on the new machines is outstanding," said Rob Edwards, equipment manager at T.L. Edwards. "You can have a conversation in a normal voice behind the pavers."

Smooth tracks. The tracks help the pavers hug curves, crucial on a project such as the new track. "The smooth track also has better flotation—it's lighter per square inch," Edwards said. "That helps prevent damage to the previous lift." He also expects track life to nearly double.

Consistency. The machines have comparable hopper capacities. The job was already a logistical challenge, and any added consistency helped—particularly when lining up haul trucks.

Air flow. "That's a big deal for us," Edwards said. "The new paver pulls the heat away from the guys. It's more than just where the exhaust goes, it actually pulls the heat away from the screed men and sends it through the exhaust."

Cat Screeds. The AS3301C and AS3251C screeds were responsive to commands, Edwards said, and effortlessly handled the required widths and tonnages.

Tier 4 Interim. The new AP1055E meets Tier 4 Interim requirements. "We care about emissions, and the environment," Edwards said. The contractor frequently works only a few miles from the ocean, which serves as a constant reminder of the importance of the environment. "We're proud to be among the first to use the Tier 4 Interim machines," Edwards said.

Global Presence Visible at Trade Shows in 2012

Products introduced at key events



isitors to the Caterpillar Paving Products 4,000-square-meter exhibit at Intermat 2012—April 16-21—will quickly learn that the space is necessary to house the many new Cat paving products.

Dozens of representatives from Caterpillar Paving Products and Cat Dealers will also be on hand to discuss the many production-boosting benefits of the new products, operator comfort and technology advances, as well as innovative and time-saving service enhancements.

The commitment in terms of space, products and people is "unprecedented," according to Josh Meyer, Regional Manager for Caterpillar Paving Products in Europe, Africa and the Middle East (EAME).

Overall, Caterpillar has reserved 8,000 square meters of space at the show, with half devoted exclusively to paving. "Intermat is by far the largest display of paving products at any trade show in our history," Meyer said.

History will repeat itself during the balance of 2012 and beyond, as Intermat 2012 is only the beginning. Caterpillar Paving Products is also planning unprecedented participation levels at BAUMA China in Shanghai; the M&T Expo 2012 in Sao Paulo, Brazil; and several other international, national and regional trade shows.

"Our presence at these important trade shows is an excellent opportunity to make a strong statement about the many customer-oriented investments



Caterpillar has made in the paving industry," said Harry Lee, Region Manager for Asia Pacific and CIS. "Not only will customers and prospects see a full array of new paving products, they will also appreciate the advances in customer support services available from the Cat Dealer network throughout the world."

The beginning

About two years ago, Caterpillar Paving Products underwent a reorganization to help them better serve the worldwide paving market. The leadership of the group made it clear that paving was the focus—and the entire world was the market. This ambitious commitment included the development of many new products that incorporate key changes and enhancements derived from customer input.

The product development dreams have now become product introduction realities. The fruits of the resulting engineering and design investments will soon be on display at several highprofile trade shows followed closely by application on customer jobsites around the world.

"The commitments made just a few years ago are now coming to market," said Meyer. "Intermat 2012 is the ideal venue for the global introduction of these many new models."

Products being displayed will vary by show. Intermat will feature a full line of pavers, including the new AP255E



and AP1055E; a new line of vibratory soil compactors; a new line of tandem vibratory rollers; and a pneumatic roller.

Ongoing investment

The unprecedented trade-show investment follows earlier news from Caterpillar Paving Products about improved manufacturing facilities and processes at plants in France, Italy, China and Brazil. A Customer Solutions and Learning Center was unveiled in the U.S., with plans for similar facilities in other locations expected to follow.

Caterpillar Paving Products also has taken steps to strengthen customersupport links. The enhanced service offerings available through Cat Dealers will be a major emphasis at every trade show. "Customers will really appreciate the massive investments in expanded support capabilities made by Caterpillar and Cat Dealers," Meyer said.

Meyer and other members of the Caterpillar Paving Products team are anxious for the shows to begin. "These shows provide perfect opportunities to demonstrate our total commitment to the specific needs of customers and prospects throughout the paving industry," Meyer said. "For thousands of dedicated Caterpillar and Cat Dealer paving people, the paving industry is what Caterpillar does—and who Caterpillar is."





You're Invited

Make the most of your factory visit with questions and observations

Those who make a factory visit part of their purchasing process come away from the tour confident that the time investment is very worthwhile. But simply visiting does not maximize the opportunity. The visit also requires some forethought and preparation.

"Visit any of our manufacturing facilities around the world and you will see the care, quality, technology and craftsmanship that go into each and every machine we build," said Lieven Van Broekhoven, Worldwide Sales and Marketing Manager for Caterpillar Paving Products. "Witnessing that process can be a crucial factor when you're evaluating your equipment options."

The answers to questions you ask before, during and after your tour will tell you much about a company, its products and the after-sale support you can expect to receive.

1. Was it difficult to schedule the tour? Difficulty scheduling might signal disorganization that can carry over to product delivery and even after-sales support. An even worse scenario: Some manufacturers don't want visitors to scrutinize their processes and products. A quality manufacturer, meanwhile, will be thrilled that a potential customer is touring.



📏 Much can be learned during visits to factories such as the Caterpillar facility in Minerbio, Italy.

- 2. What role do workers play? Are they engaged, focused and hard at work? Are they available to answer your questions? Some manufacturers discourage workers from talking to customers. Conversely, Caterpillar Paving Products is eager for those on the manufacturing lines to share information with customers.
- **3. What do the components look like?** This is the best view you will ever have of some components and parts waiting for assembly. Are they thick? Polished? Smooth? Properly coated and protected?
- 4. Does the tour focus on what you really care about?

A tour that anticipates and answers your questions is an indication that the company understands what matters to its customers—and the industry, too.

5. Is contamination control a theme? Watch for, and ask about, dust control efforts. Check to see if hoses are capped. Look in the parts area to see how inventory is packaged, stored and handled. Clean work stations also lessen the chances of contamination.

6. Does the process flow?

A smooth manufacturing process is a sign of a well-organized manufacturer. Quality products result from quality processes. Also, efficiency helps keep costs in check.

7. Is rigorous testing part of the routine?

Watch how frequently machines are being evaluated. Are the workers attentive to the tests, or simply going through the motions?

8. Are hoses and wires on the machines cared for?

The tour provides an opportunity to see areas of the machines you'll rarely have access to again. What happens in those hidden spots can have a significant impact on quality. Hoses should be separated with isolation mounts; it's a small step that helps eliminate rubbing. Watch for contact points with wires, too.

9. What role does technology play?

Laser cutting and advanced welding processes are essential to ensure perfect fits and sturdy bonds. Has the manufacturer invested in, and updated its facilities to automate steps that require the greatest precision?

Scheduling a tour will help you answer these questions, and more. Call your Cat[®] Dealer to make arrangements for a factory tour as part of your product evaluation and purchasing process.



Customers review the manufacturing process during a factory tour.



A The U.S. facility in Brooklyn Park, Minn.

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American Road & Transportation Builders Association



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