





# A SOLID CHOICE

Equipment tires can impact production in a rough environment like a scrapyards. Solid rubber tires are the best option to avoid punctures and cuts, vendors say. BY KEN MCENTEE

Scrapyards can wreak havoc on equipment tires. Choosing the wrong tires for material handlers, loaders, forklifts and other mobile equipment can result in costly replacements and the loss of precious production time, tire vendors said.

“Scrapyards are full of sharp objects that are hazardous to all tires,” observed Brandon Machell, national sales manager for Setco Inc., Idabel, Oklahoma.

Added Brian Bentley, national account program manager, construction, for Yokohama TWS North America Inc., Wakefield, Massachusetts. “The type of tire [used on scrapyards equipment] matters because you need to have a tire that can live within that environment, deal with all the abuse and continue functioning as expected.”

Bentley said common scrapyards tire problems include cuts, chipping of the tire compound and debris embedding itself in the tire. Flat tires can be a problem for operations that use pneumatic tires, he said.

“There also could be heat-related failures because of the load, speed and distance traveled,” Bentley said.

“Scrapyard tires are subject to cuts and punctures,” said Jerry Bruner, CEO,

Advance Tire Inc., Millstone, New Jersey. “Most pneumatic and foam-filled tires will fail if they are cut or punctured. Solid tires have more wearable rubber than

pneumatic or foam-filled tires.”

To avoid damage, Bentley said, most scrapyards operators are now using solid rubber tires on their equipment.

“The industry has determined that the longevity of solids greatly outweighs the ride performance of a foam-filled tire,” he said. “However, with the introduction of Trelleborg [a Yokohama TWS brand] Soft Ride, you can have the best of both worlds.”

The best tire for scrapyards equipment is one that “will deliver the most comfortable ride possible without compromising operating cost per hour, durability or longevity in a scrapyards environment,” Bentley advised.

Compared to pneumatic and foam-filled alternatives, solid rubber tires are best suited for scrapyards in most cases, Machell opined.

“Pneumatic tires are vulnerable to punctures,” he said. “Foam-filled tires are vulnerable to large cuts and do not have any more wearable tread rubber than a pneumatic tire. The price of a foam-filled tire is nearly as much as a solid rubber tire, so why not pay a little more for a tire that is more durable and will have four to five times more wearable rubber?”

Machell acknowledged that solid rubber tires are not invincible. “However, they are

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Setco Inc.

able to withstand much more severe injuries when compared to pneumatic and foam-filled options,” he said.

Bentley agreed.

“Solid tires have a significantly longer life than both pneumatic and pneumatic foam-filled tires of the past,” he said. “They’re able to hold up in the environment. Scrap metal cuts tires—that’s the bottom line as to why scrap companies have migrated to using solid tires. They need to work in a scrap pile and continue to run. Compared to a pneumatic tire of the same size, solid tires have two-and-a-half to three times the amount of usable rubber.”

Bruner said press-on aperture solid tires generally are best, “but there are some types of equipment that require non-aperture solids because of the equipment’s overall load-carrying capacity.”

Press-on tires are mounted onto a steel hub using a press. Apertures are openings in the sidewall of a solid tire that provide flexibility to an otherwise rigid tire.

“Press-on aperture solids have the advantage of providing a cushion ride,”

Bruner said. “The softer ride is better for the equipment and the operator. It also helps the tire last longer.”

### MEASURING PERFORMANCE

“[With solid rubber tires], when you show up in the morning your equipment will not have a flat tire and will continue to run each day without any downtime,” Bruner said.

According to Bentley, “solid tires will last longer in a scrapyards, which means less downtime for service, spending less money on service and less downtime from tire-failure issues.”

Bentley said the best way to measure the performance of a solid tire is cost per hour.

“And, while it is not necessarily measurable, the performance of the ride is also important,” he said. “Trelleborg’s Brawler HPS Soft Ride solid tires ride like a 30-durometer foam-filled tire but deliver the performance of a solid tire. A softer ride translates to less wear and tear on the equipment due to less vibration but also an improved ride for the operator and the payload.”

Machell said there are multiple ways to measure the performance of tires.

“One of the most common is tracking cost per hour over the lifetime of the tire,” he said. “There is a difference between cost and price. At Setco, we use proprietary online-based tire tracking software that tracks lifetime cost per hour, projects future tire replacements and rotations and automatically generates future tire budgets. The system [Setco TMS] is free for all of our current and prospective customers.”

Machell noted that Setco recently launched the Setco TMS mobile app, which allows customers to access information from their mobile devices.

### CHOOSING A TIRE

There are many different types of solid tires, Bruner said.

“Some are built to replace pneumatic tires, [and] some are engineered specifically for a particular equipment model,” he said. “So a solid tire for a forklift will not be the same as what you would want for a solid tire on your loader. When talking about loader solid tires, you should

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look for press-on aperture solids or cushion solids. These types of solids will provide a long tire life while not shaking apart your loader and operator.”

Bentley said the “differences are in the compounding. Every manufacturer has their own. Trelleborg’s Brawler Soft Ride tires are constructed using a durable cut-resistant compound, which delivers the longevity you’d expect from a solid tire and excellent ride comfort.”

In addition to press-on Soft Ride tires, Trelleborg designs and manufactures a molded version on which the

rubber is chemically bonded to a steel wheel, he said.

“The benefit in scrap is that this type of tire has more usable rubber on the larger machines and the offering is larger—up to 35/65R33,” he said. “For material handlers that come with dual forklift tires, Trelleborg has created a deep super single using a mining compound to replace the traditional forklift tires, which delivers substantially longer tire life.”

According to Machell, “what sets [Setco] apart from our competitors is

that we are family owned and the only solid rubber tire manufactured in the U.S. Our business model differs from most of our competitors in that we sell direct to the end user and rarely distribute through independent tire dealers.”

### CARING FOR YOUR TIRES

The lifespan of a solid rubber is dependent on how it is used and maintained, vendors said.

“A tire on a Corvette with a teenager behind the wheel will not last as long as a mom driving her minivan to soccer

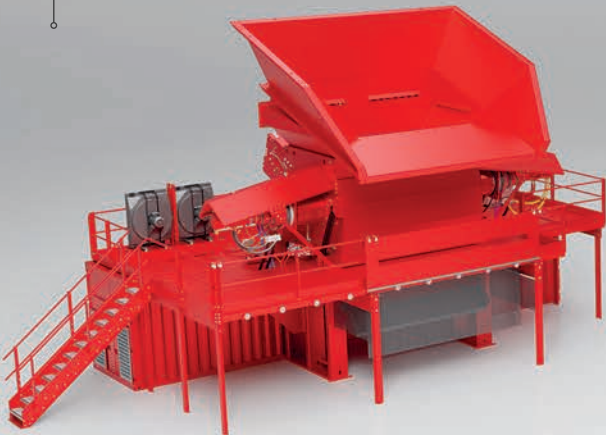
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practice,” Bruner compared. “Each application is different.”

Bentley agreed.

“Because every application is different, there’s no definitive answer as to how long a solid tire will last,” he said. “Variables like tonnage being moved, the surface the tires are running on and the environment in which they’re working will affect the wear of the tires. Even in similar situations, factors like the experience of the operator and the number of shifts the equipment runs per day can impact the lifespan of a tire. But a solid tire will last two to three times longer than a pneumatic tire.”

Machell said the best way to increase tire life is to keep its work area clean of debris as much as possible, limiting tire



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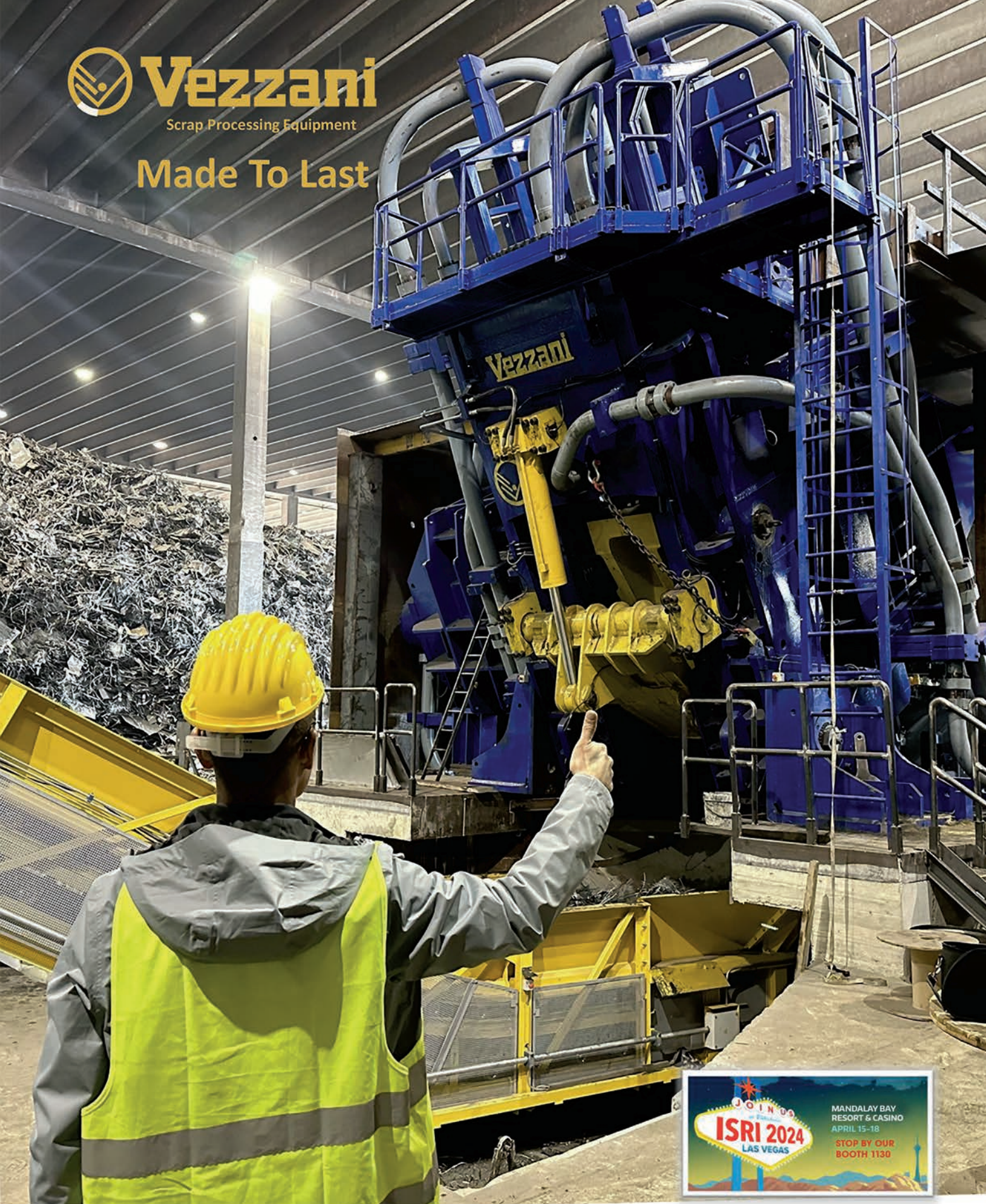




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spinning and monitoring wear rates to keep tires rotated.

“Setco TMS eliminates the guesswork of when to rotate,” he said. “It will not only tell you when, but also where each tire needs to be rotated to. This ensures tires remain matched up across axles, eliminating damage to the drivetrain.”

Bruner advises that operators keep their yard clean and dry.

“Oil is a tire’s worst enemy,” he said. “It will soften the rubber and cause it to wear out prematurely. Proper operator training is also key. Even though it’s a solid tire, operators should still try to avoid hazards.”

Bentley said the most important thing an operator can do to increase the lifespan of solid tires is to properly rotate them.

“Operator training can also prolong the life of the tires,” he said. “Educate them to lift the bucket as they load it so the tires don’t spin and stress as they move forward. Inspecting the tires and performing routine and preventive maintenance on the equipment also will help, as will ensuring that the roads are clean of debris.”

Meanwhile, misuse can lead to a reduced lifespan, vendors warned.

“Solid rubber tires are not invincible,” Machell said. “Treating them like they are, by excessively running over scrap or sitting them on top of sharp objects, will severely reduce their life.”

Knowing when to change a tire also is important, vendors said.

“Every manufacturer has a recommended pull point for their tire,” Bentley said. “Solid tires can be worn beyond that point so long as there’s not anything mechanical that would be affected by running smaller tires. But it’s safest for the equipment, the operator and the operation to follow the manufacturer’s recommendation.”

The “pull point” will vary by the type of equipment and the operation.

“A solid loader tire for example can be run till it reaches the wear bar,” Bruner said. “This worn height will vary on different tires. Some operations can run their solid tires down further if they



do not have to lift to load. In most cases, when you hit the aperture holes the tires should be changed. Some manufacturers recommend running their tires down to the lowest possible point. This is not recommended since it is hard on the equipment and can cause damage to the drivetrain. It will cause you to burn more fuel while operating the loader. Most manufacturers should recommend a pull point based on your application and needs."

Machell said, however, that Setco's tires "are 100% rubber from the wheel to the tread, so as long as you aren't running into ground clearance or reach issues, you can run our tires to the wheel."

Bruner said solid tire prices range from less than \$200 for a small forklift solid to "well north of \$18,000 per tire for large loader tires or haul truck tires."

In the past, Bentley noted, "solid tires were more expensive than foam-filled tires, but today the price difference is minimal."

#### RECENT ADVANCEMENTS

In the past 10 years, Bruner said, the press-on solid loader tire has advanced into the market as the preferred type of solid tire.

"They have replaced the older type of molded-on hard-riding solids," he said.

According to Bentley, "Trelleborg's Brawler Soft Ride tire compound combined with Brawler's unique elliptical sidewall apertures delivers higher shock absorption and reduced vibration, ensuring the best possible protection for operators and machines."

He said the Brawler HPS Soft Ride offers the toughness of a traditional solid tire and the ride comfort of a foam-filled pneumatic tire.

"They deliver 40 percent more deflection, 30 percent less vibration, a 20 percent larger footprint and run 10 percent cooler compared to previous generations," Bentley said.

Machell said Setco uses durable rubber compounds that help lessen damage inflicted to its solid tires in the scrapyard. /

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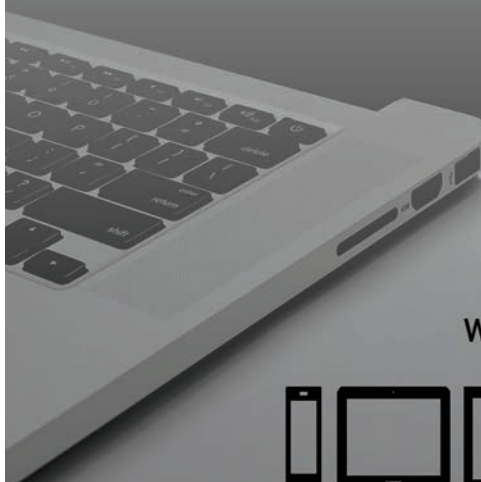
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