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EQUIPMENT ■ OPERATIONS ■ SOLUTIONS

Another
POLYDECK
SCREEN CORPORATION
Success Story

E&T SCREENING

Synthetic Solution

A California producer finds a way to reduce blinding and wear on screen decks.

Regarding crushing and screening, Gary McCall, area manager for Hanson Aggregates' San Diego-area operations, says, "Things have not really changed in the last 150 years. You take large rocks and put them in a machine to make little rocks, and then you run that material across something with little holes in it and you sell what comes out."

McCall acknowledges this is an overgeneralization, but the crux of his argument is accurate. Machines have added more steel and horsepower, but the basic technique has stayed the same. It reflects the fact that changes in this industry can be slow to take hold.

Synthetic screening media, for instance, has been available for decades. Yet many in the industry don't know its benefits and have been reluctant to try it over familiar wire cloth. Hanson Aggregates' facilities in Southern California, however, had been experiencing problems with blinding and excessive wear on its wire screens. A switch to Polydeck synthetic screens proved to be the right solution and also increased production, reduced noise pollution and made the workplace safer, the producer says.

Alluvial deposits

McCall oversees nine of Hanson's operations in the San Diego area and has partial responsibilities at a Hanson plant in Mexico. His sites produce up to 5 million tons of concrete and asphalt aggregate each year.

While sites vary from alluvial deposits to "drill and shoot" quarry operations, a common problem was seen in the company's screening process — especially on lower decks and in its manufactured sand production.

"Particularly with the alluvial deposits," McCall says, "and even here [at the El Cajon quarry], with all the dust control that we use, our screens would blind over. There was, on average, about an hour of production per day spent cleaning screens."

Figure 1 shows the extent of the blinding that occurred with steel wire cloth at Hanson's Santee plant. The wasted time cleaning screens combined with decreased output caused by blinding forced McCall to take action.

Challenge

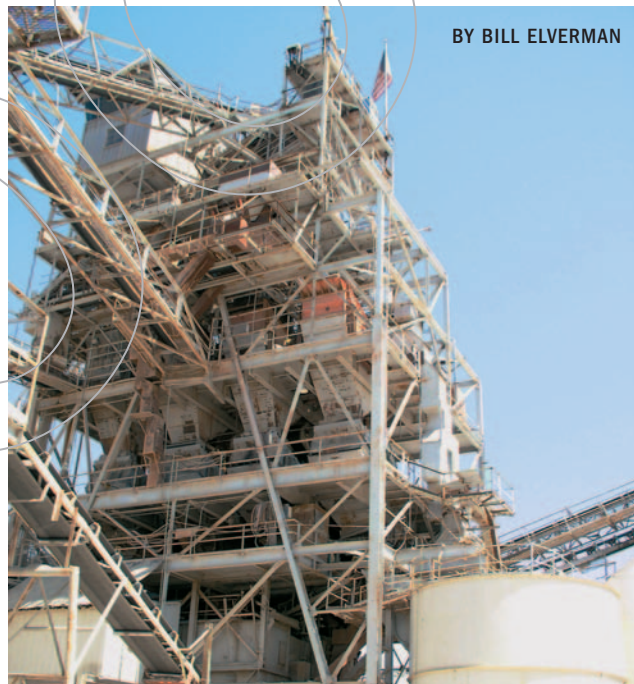
Eliminate the downtime and maintenance created by blinding and wear of wire screen media.

Solution

Replacement of wire screen media with Polydeck synthetic screens.

Tip

Fewer screen maintenance demands equates to a safer operation.



BY BILL ELVERMAN

Three years ago, Alan Tindall, regional sales manager for Polydeck Screen Corp., approached McCall with a potential solution to the blinding problem: synthetic modular screens to replace steel wire cloth. Tindall introduced his company's Rubberdex Flexi modular rubber screens with the claim that a flexible, rubber screen would prevent build-up often experienced on rigid, steel wire screens.

As seen in Figure 2, this claim proved accurate, and the blinding problem was solved. The 40 durometer rubber screens provided the perfect combination of flexibility to reduce blinding and strength to improve wear characteristics. In fact, McCall hasn't had to replace a single modular synthetic deck in three years. The product has helped improve aggregate production, increase employee safety and reduce noise — all while driving costs down.

"We've seen — depending on the site — at least a 10 percent improvement on a daily basis just in plant availability," McCall says, "which equates to additional product on the ground for the same cost."

McCall allows that synthetic modular screening media has a higher up-front cost than wire but is quick to point out that, in the past, he

"IF A GUY CLIMBS ONTO A SCREEN OR DOWN INTO A SCREEN [TO CLEAR IT], THERE IS ALWAYS A CHANCE FOR A STRAIN OR AN INJURED HAND. SO, IF HE'S ONLY UP THERE ONCE A WEEK, YOU CUT THAT EXPOSURE DOWN."

—GARY MCCALL
HANSON AGGREGATES



Figure 1: Wire cloth screen is blinded over at Hanson's Santee plant.

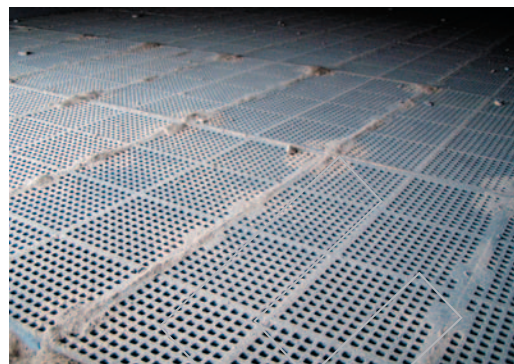


Figure 2: The deck is free of blinding after installation of synthetic screening media.

would have to change each wire deck once every two to three weeks. Match that with the added labor required to constantly check for blinding on the decks, the associated plant downtime and the energy spike when firing the plant back up and, McCall says, the synthetic modular screens quickly pay for themselves.

Safety benefit

McCall says there has been an improvement in employee safety because of the reduced maintenance to the screening decks owing to reduced wear and blinding.

"Exposure is exposure," he says. "If a guy climbs onto a screen or down into a screen [to clear it], there is always a chance for a strain or an injured hand. So, if he's only up there once a week, you cut that exposure down."

McCall says there are some applications where, historically, he would not use synthetic modular screens, such as screens where sizing changes are being made on a frequent basis (two to three times per week). But manufacturers like Polydeck have answered this concern by designing frames that can incorporate crown bar adapters that retrofit a deck to accept wire cloth. If a short run comes along that would be better suited by a particularly sized wire screen, McCall can simply pop out the synthetic modular panels, place in the crown bar adapters and lower in the wire screen.

"The installation of the crown bars that plug into place was a big selling point for me on the Polydeck system," McCall recalls. "It takes very little time and gives you that other option."

Overall, however, McCall likes the flat profile of a synthetic screen deck because he believes it feeds the aggregate more evenly across the deck, which makes for more-effective screening.

"With the wire decks, you have a crown in the deck, and your most effective screening is going to be in the middle," he says. "Once you get towards the end of the deck, most of your material is to the sides of the screen [because of the crown], so you don't get as effective screening with the wire tension decks [as

with flat synthetic modular decks]."

Irwindale plant

Bruce Dubé, plant manager at Hanson's massive Irwindale, Calif., plant, has seen similar benefits with Polydeck's polyurethane screens and reports a significant savings in screen-related costs. Dubé retrofitted existing shakers with the synthetic screening media to reduce screen wear and noise at his plant. Polydeck's method for incorporating the screens made the transition easy.

"Polydeck has such a nice changeover application," Dubé says. "They apply a grid that looks like a large bed frame made out of hardened steel. It takes the place of the framework that accepts the wire cloth."

The greatest benefit Dubé sees at his plant is the reduced wear that polyurethane screens provide over wire. A "blown out" wire screen requires a plant shutdown, which is extremely expensive. Dubé began switching his plant over to polyurethane screens six years ago and now has 98 percent of his 35 decks outfitted with Polydeck's synthetic modular screening media. He hasn't had to replace a single synthetic screen in six years, except for an occasional 1-ft. x 1-ft. modular panel situated right below a discharge chute.

"Changing screens on a daily basis is a thing of the past and it's something we don't miss," Dubé says. "On a daily basis, we were changing up to five or six [wire] screens. Back then we had about 27 screens out here, and you found most of your wear on the scalping stations where the larger rocks were. And there were a lot of screen changes, not to mention screen changeovers for gradations, etc."

Maximizing open area

All of these factors contribute to the cost savings Dubé has identified since switching from metal screens to polyurethane. Another concern he had when making the switch to polyurethane was the potential carryover caused by lack of open area (the percentage of

surface that material can filter through).

"This plant will do up to 2,000 tons per hour," Dubé says, "and you don't want any carryover. With the help of Polydeck, we were able to maximize our open area. We came up with at least 50 to 60 percent efficient open area, which is very good." The solution was to utilize Polydeck's patented Maxi panel design with 35 to 40 percent more open area than any other synthetic panel on the market, according to the manufacturer.

Dubé also echoes McCall's comments on the safety benefits of synthetic screens. "Changing and checking screens is not just visually stepping over the top of the shaker [and looking]," he says. "You actually have to go inside the shaker and check each level down. Then you've got heavy screens that you have to raise up and there is an obvious safety issue. [Having a polyurethane screen]."

Another matter of safety and comfort for employees and neighbors to the plant is the reduced noise created by synthetic screening media over wire. Dubé reports a substantial reduction in screen noise — as low as 75 decibels in some places — which reduces the overall noise pollution of an aggregates plant.

"Before [polyurethane decks], it was incredibly loud," Dubé says. "We are well within our noise requirements with the polyurethane screens. We want to be good neighbors so that people are happy."

McCall is also happy with the changes his plants have made. The reduced maintenance to his screens has had a big effect on production and the efficient use of manpower. "At one plant alone we had about six man-hours per day of guys doing nothing but checking screens," he says. "That's almost an entire guy just checking screens. If you can reduce that to just once a week, it's like you've got a whole new employee to work elsewhere in the plant." ✕

Bill Elverman is a Long Beach, Calif.-based freelance writer.

Polydeck Screen Corp.

An industry Leader

Since the introduction of their revolutionary Polydex modular synthetic screening concept in 1978, Polydeck Screen Corp. has grown to a position of leadership in the aggregate and mining industries. The customized formulation of their synthetic screen panel materials offers significant improvements in wear life over more traditional screen materials such as wire cloth and punch plate, and their modular panel designs are much easier and more convenient to replace. Combining these technological advantages with a solution-focused approach makes Polydeck your best resource for screen media and systems.

Innovation

Polydeck has been able to achieve and maintain a position of leadership in screen media systems because of their aggressive research and development initiatives. They are constantly evaluating material formulations, screen panel and frame designs and manufacturing processes in order to improve the quality and service life of their products. Their reputation for innovative problem-solving, beginning with their field sales staff all the way through R&D, applications and engineering, has led to developments like the Maxi screen panel design, with the highest open area in the industry; the versatile Pipetop frame system, which offers multiple fastening options from one frame; the PolySnap fastening system, the ultimate in simple installation and removal; and a wide range of non-blinding polyurethane and rubber



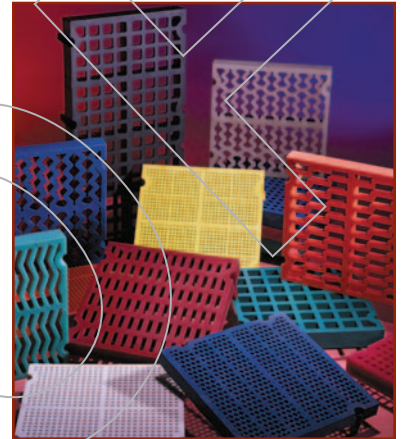
screen panel configurations.

Polydeck has over 600 screen panel designs and is constantly adding more in order to offer the best possible solutions to your screening challenges. They work closely with you to test and identify the best possible screen panel choice (or choices) to meet your production needs.

Quality

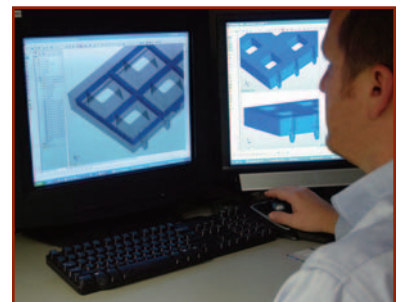
Throughout the evolution of the entire Polydeck product line, quality of materials, processes and service have been their hallmarks.

Their state-of-the-art injection molding process offers several advantages over more common molding techniques. Injection molded panels are more consistent in the size of the openings and in the quality of the panel surface and composition. In-house tool/die operations allow Polydeck to design and make all of their screen panel and accessory dies, ensuring high quality and responsive service. Their frame fabrication department enables them to manufacture and finish frame systems to fit virtually any situation, from individual stringer sections to complete, rubber-lined support frames.



Service

As a specialty firm whose only business for more than 25 years has been screen media and related accessories, Polydeck is able to provide the focus, resources and service that multi-faceted corporations cannot. Their field sales staff, agents and distributors are all highly technical, experienced professionals who will consult with you to arrive at the best possible screening solution. Their inside sales staff acts as your advocate to monitor your order as it moves through the plant until it is shipped to your site.



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Blinding Problems? No Problem!

We
Guarantee
It!



Before: Due to moisture, fines and dust clump together to blind screen openings, significantly reducing production.



After: Polydeck Flexi screen panels' vibrating action eliminates blinding once and for all.

If you have a problem with screens blinding over, then our Polydeck Flexi rubber screen panels may be the answer. Made of a special 40 durometer rubber compound, these panels are virtually blinding-proof. Their one-piece, injection molded construction features the highest open area in the industry. Their gusseted connections strengthen the screen area to help prevent tear-outs. Their 1' by 2' modular design makes them a snap to install and remove.



Give us a call. We'll meet with you to review and evaluate your application. Then we'll recommend one of our many Flexi panel design options or our engineering and tool-and-die staffs can design a customized solution for you. There are plenty of other daily issues you have to deal with. Choose Polydeck Flexi rubber screen panels and blinding won't be one of them.



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