

FLSmidth screen media - Improved material, increased productivity

FLSmidth's screen experts found that the customer would be better served by the next generation of polyurethane screen panels rather than the standard polyurethane panels. This discovery doubled the wear life of their polyurethane screen media.

Background and objective

A new Acland mine in South East Queensland, Australia was looking at options to increase the productivity of their vibrating screens and to decrease their maintenance cost. Historically, FLSmidth had performed a lengthy optimisation process and recommended standard modular polyurethane and wedge wire screen media for the plant. The polyurethane panels had a wear life ranging from three weeks to six weeks of continuous operation and management was looking for ways to reduce the total cost of operation.

Frequent screen panel replacement led to high maintenance and opportunity costs, and lowered equipment productivity. Screen maintenance personnel had to spend an increased time on the screen changing panels, increasing safety risk.

FLSmidth took the opportunity to explore new possibilities to improve the wear life of the screen media and the availability of the vibrating screens, and to increase site safety.

BENEFITS OF OPTIMIZED SCREEN MEDIA MATERIAL

- Doubled the wear life
- Increased screen availability
- Decreased maintenance
- Greater productivity
- Improved screen safety

Material Trial

FLSmidth screen media experts analysed the situation and recommended a new grade of polyurethane material. The new material was installed across the feed and intermediate section of a drain and rinse screen to assess the media performance. The test polyurethane panels were dimensionally identical in aperture size, aperture positioning and open area to the standard panels to compare the wear rates effectively.

The vibrating screen was run for a cumulative utilisation of three weeks before the first inspection shut down. The test went on for another five weeks to monitor the wear rates and ligament loss on the trial panels. The total duration of the trial was around 18 weeks and the test panels were replaced with new panels at least once during this period to gauge repeatability.



The FLSmidth next generation panel trial proved that we can improve on the already good life of the current FLSmidth panels used on site. The immediate benefit will be less time spent on screen deck maintenance when we roll this out across our screens in the future”

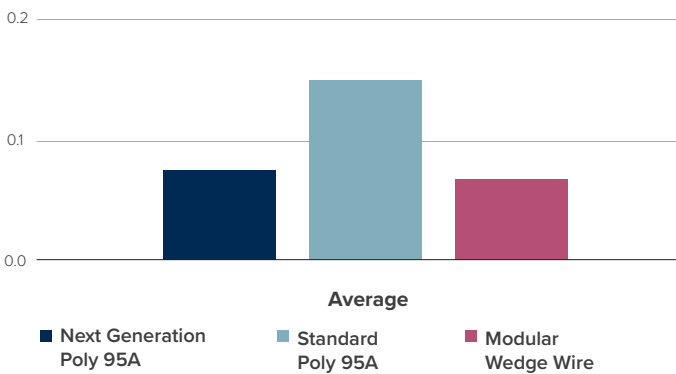
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The results

The standard panels were removed when they wore beyond acceptable limits after only three weeks. FLSmidth’s new polyurethane material was promising, with approximately half the wear rate. These next generation panels exhibited less scalloping than the standard. All of the new panels survived 10 weeks, compared to the five weeks that most of the standard polyurethane panels lasted. In fact, the wear rate of the new polymer was close to that of the stainless steel wedge wire panels.

Doubling the screen media wear life lowered the amount of time maintenance personnel were required to spend on the screens. The customer benefited from increased safety, decreased maintenance, lower media costs and greater productivity, thus meeting their goals for the trial.

Average Wear Rate (mm/week)



Comparative wear performance of the trial screen panel materials showed that the next generation polyurethane panels had double the wear life than standard polyurethane panels and wear performance similar to wedge wire panels.

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