HAVER & BOECKER

NIAGARA

FINDING THE SWEET SPOT

Your Guide to Optimal Screening

PROcheck is designed to help maximize profit, productivity and proficiency in your plant.

When it comes to screen media, understanding the relationship between opening, open area and wear life will help you optimize your vibrating screen for maximum throughput and product quality.

By analyzing the three phases of screening – basic, layered, and sharp – our PROcheck process helps to find the optimal combination of open area and wear life in each phase by blending the right types of screen media to achieve your product specification.

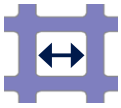
Rather than using only woven wire for high open area, or only polyurethane for longer wear life, you can reduce wear, lessen screen change-outs, and increase open area by strategically choosing combinations of screen media for optimal screening.

In other words, finding the sweet spot!

OPENING VS. OPEN AREA

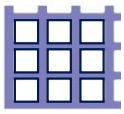
Before we look at the phases of screening, let's first consider opening versus open area.

Opening represents the size of the hole.



Have a look at the Ty-Wire and Ty-Max examples below. Both have the same size hole — or opening — of 1 inch (25 mm), so each will produce the same product.

Open area, generally speaking, represents the number



of holes within a specific area — or, in other words, the number of opportunities a particle has to fall through an opening.

Both the Ty-Wire and the Ty-Max examples are the same size, and both have the same size opening to produce the same product. In this case, Ty-Wire offers nine holes — or nine chances — for the particle to fall through an opening, whereas Ty-Max offers four holes — or four chances — for the particle to fall through an opening.

OPEN AREA & WEAR LIFE

Next, we should consider the balance between open area and wear life.

In our examples below, Ty-Wire offers higher open area, but less wear life than Ty-Max. Whereas, Ty-Max offers better wear life but less open area than Ty-Wire.

Since both examples produce the same size product with their 1-inch (25 mm) openings, you can use a combination of both, or other types of screen media with the same size openings, in order to achieve the best combination of wear life and open area. We recommend exchanging one section at a time until you find the sweet spot.

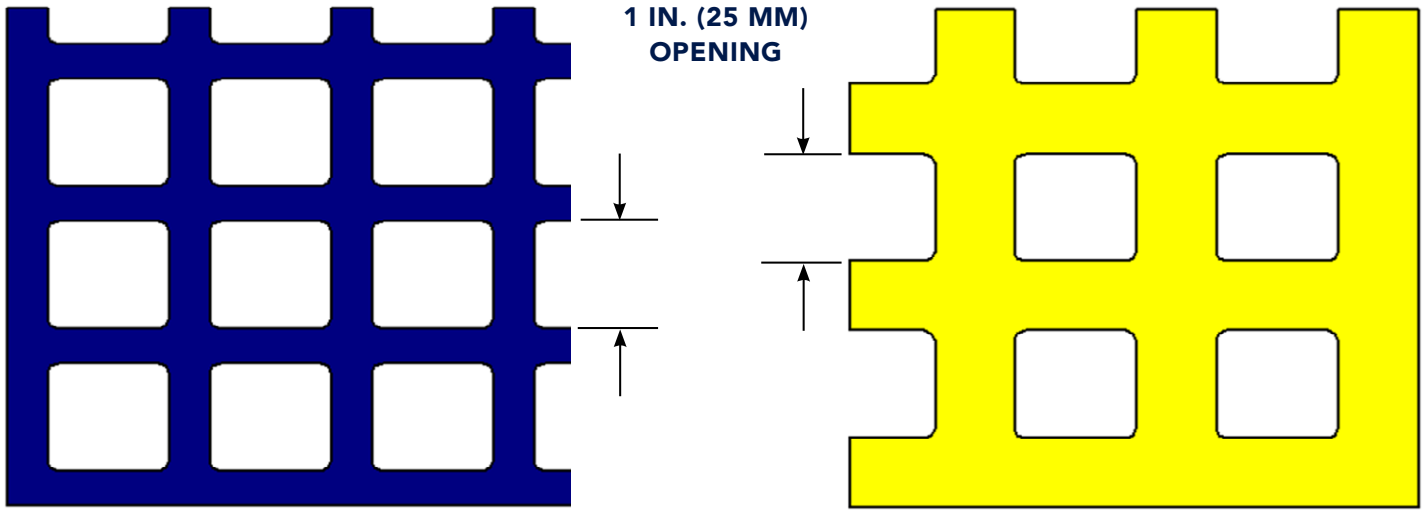
That is a PROcheck solution.

TY-WIRE

Wear life compared to woven wire: 4-7X longer

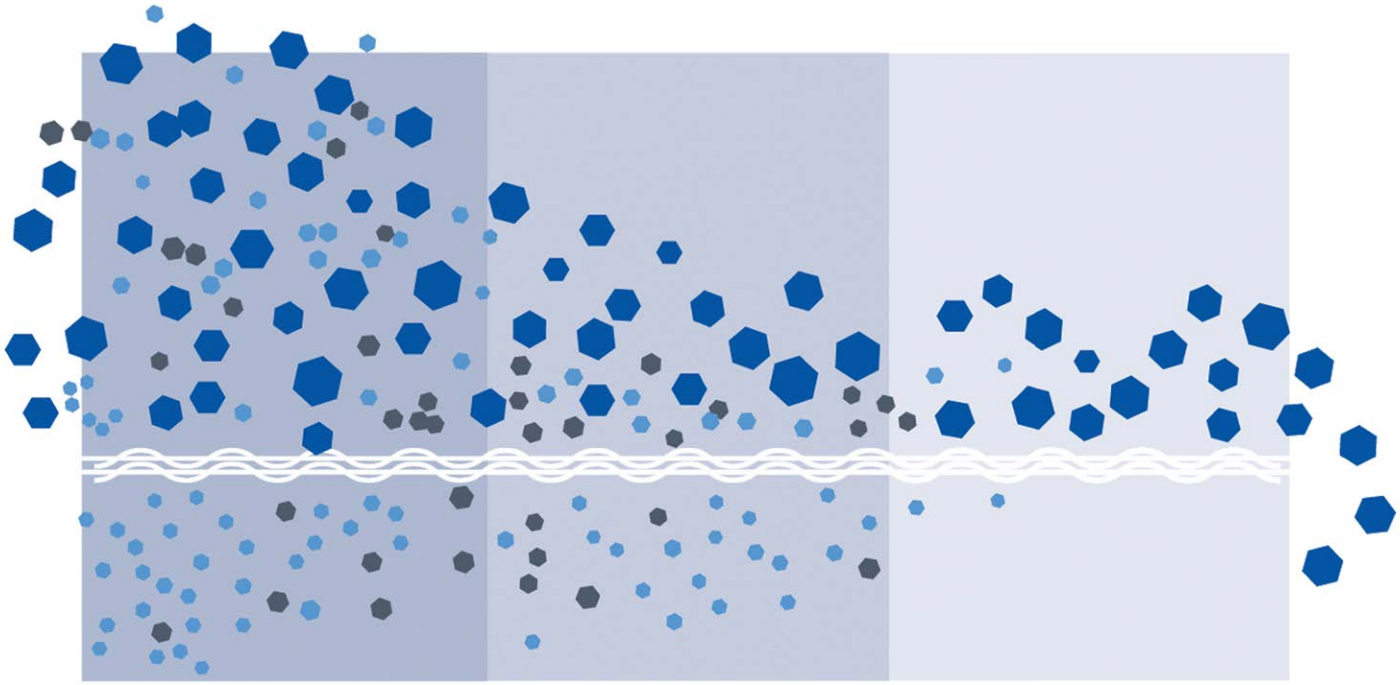
TY-MAX

Wear life compared to woven wire: 7-9X longer



WHAT ARE THE PHASES OF SCREENING?

When the material hits the screen deck it goes through three phases from the feed end to discharge end: layered to basic to sharp.

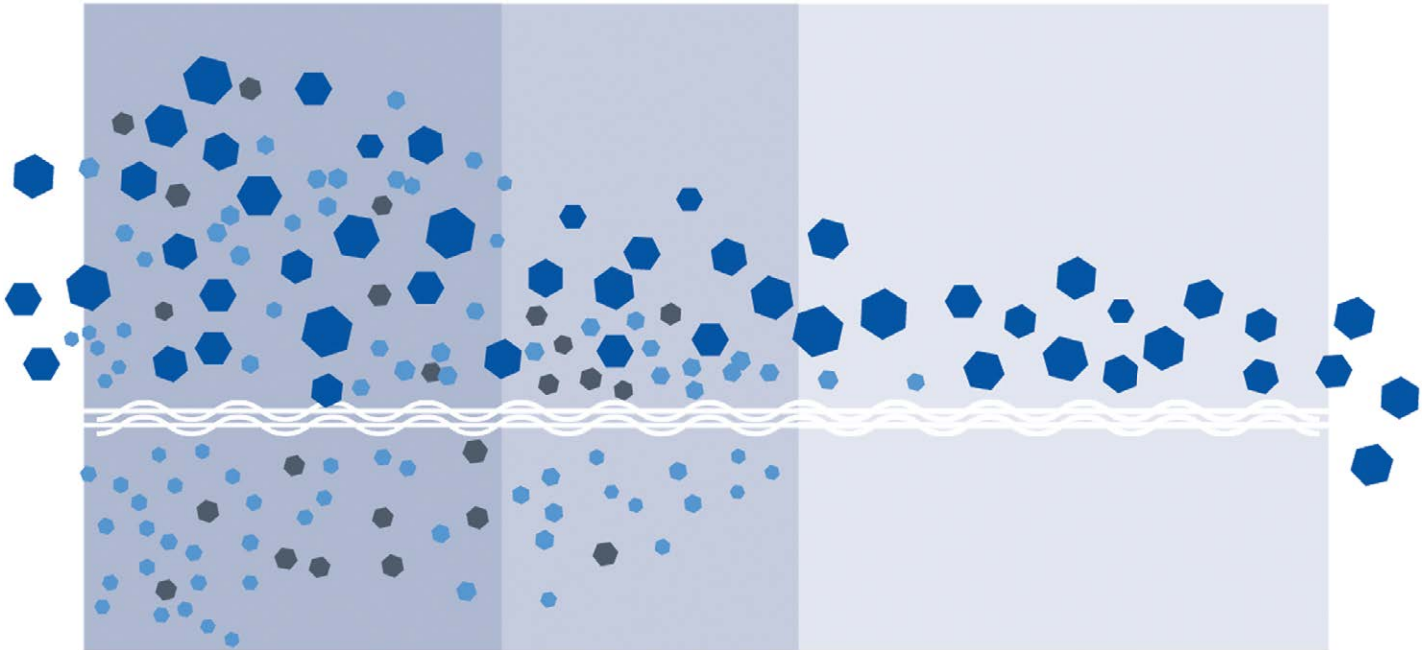


PHASE 1: LAYERED
Typically appears at the feed end and contains a mix of coarse and fine particles, with a deep bed depth. In this phase, screen media should be impact-resistant and have a high wear life.

PHASE 2: BASIC
Occurs in the middle of the deck where the particles are stratifying, and near size and oversize particles are at the top of the bed. In this phase, the screen media should have a balance of open area and wear life.

PHASE 3: SHARP
Taking place at the discharge end, near size and oversize particles are in direct contact with the screen media. This phase is critical and screen media should have maximum open area.

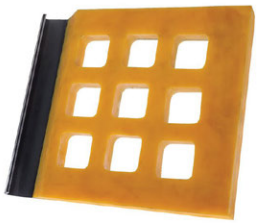
EXAMPLE 1: SCREENING FINISHED EARLY



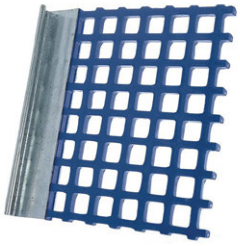
CURRENT SET-UP	SITUATION	RISK
Woven Wire Cloth	When screening is finished early, it is completed within the first 1/3 of the deck and under size particles have passed the media openings.	Losing out on the maximum potential of the screen media.

PROCHECK SOLUTION	REWARD
Using Ty-Max at the feed end combines excellent wear life with good open area. Ty-Wire hybrid screens provide better wear life than wire cloth with more efficient open area than traditional polyurethane in the middle of the deck. At the discharge end, Flex-Mat provides the corresponding wear life and open area for this phase.	Increase profit per ton by maximizing wear and eliminating unscheduled change-outs.

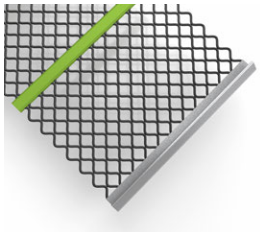
TY-MAX



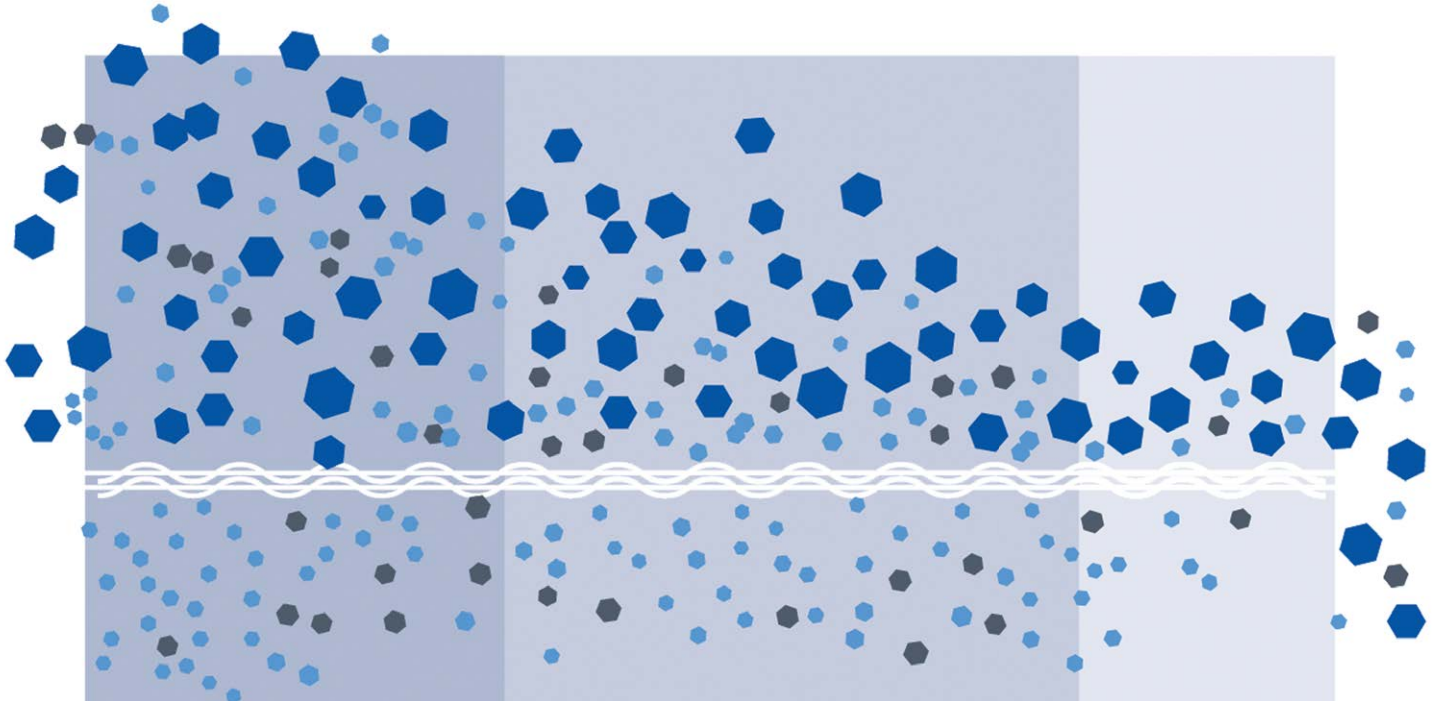
TY-WIRE



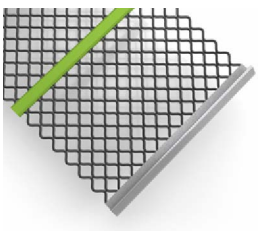
FLEX-MAT



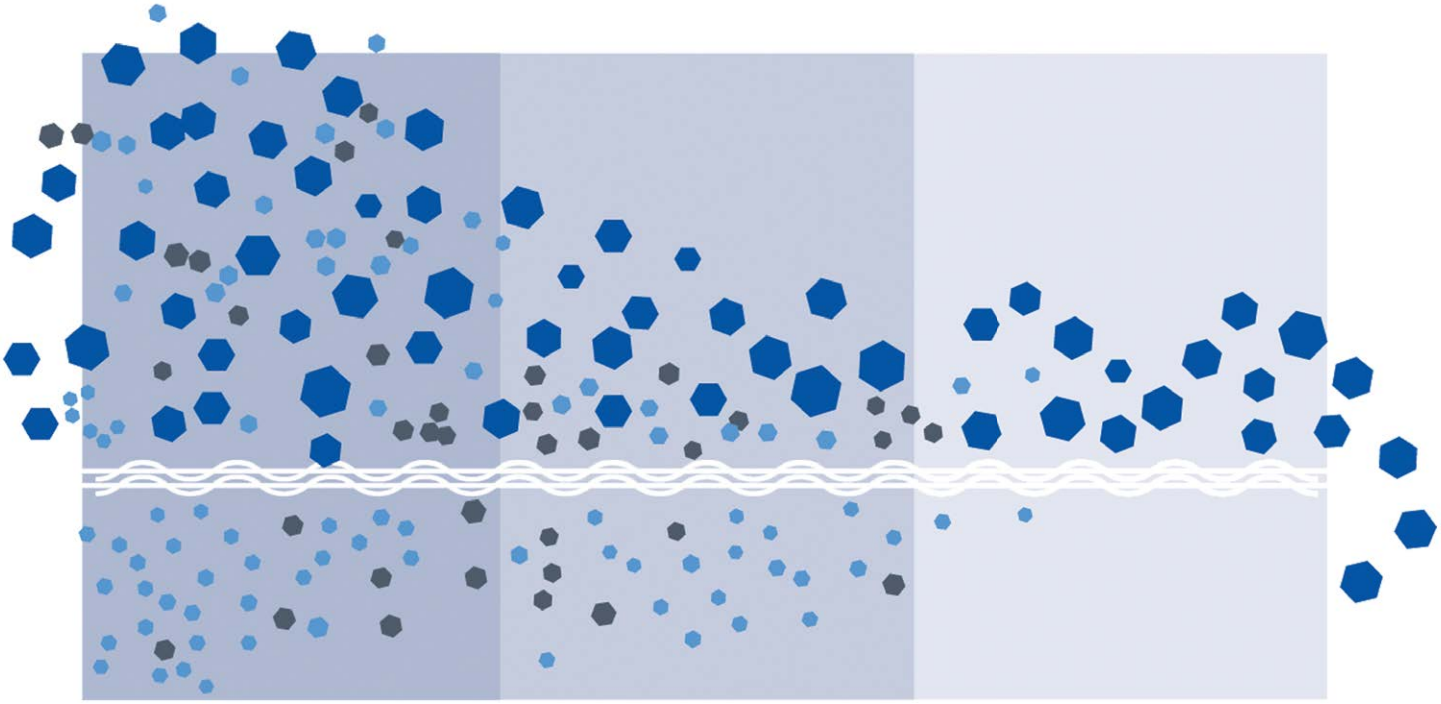
EXAMPLE 2: SCREENING NOT COMPLETED



CURRENT SET-UP	SITUATION	RISK
Woven Wire Cloth	Screening is not complete because undersized particles are going over the discharge end.	Carry over and contaminated material.

PROCHECK SOLUTION	REWARD
Using Double-Weave at the feed end provides good wear life and open area, while Flex-Mat increases open area in the mid-screen and at the discharge end. **DOUBLE-WEAVE**  **FLEX-MAT** 	Better product quality, as carry over and contaminated material have been eliminated. Increased wear life and less downtime will also help to meet specifications more efficiently.

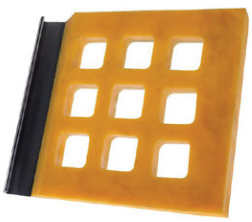
EXAMPLE 3: OPTIMAL SCREENING



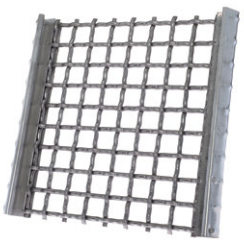
CURRENT SET-UP	SITUATION	RISK
Woven Wire Cloth	Most screening is complete approximately 2/3 of the way down the deck. Near size particles utilize the last 1/3 of the deck to find an opening.	Even though the full deck is being used, the potential of the screen media is not being maximized.

PROCHECK SOLUTION	REWARD
Excellent wear life and good open area are provided by Ty-Max on the feed end. The mid-screen(s) provide good wear life and efficient open area with Square Woven Screens. At the discharge end, Flex-Mat is used to extend wear life and provide the required open area.	Increased profits and maximum efficiency by utilizing the full potential of blended screen media.

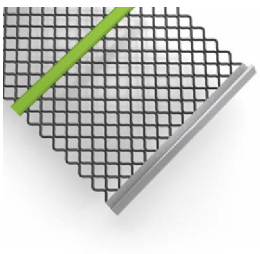
TY-MAX



SQUARE WOVEN



FLEX-MAT



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If unscheduled screen change-outs or contamination issues are eating into your profits, it's time to consider a new screen media combination. Implementing a variety of screen media types to balance wear life with open area can increase productivity, lessen downtime and improve ROI.

FIND THE SWEET SPOT!

Schedule a PROcheck consultation today to find the best combination of screen media to ensure your operation's proficiency, productivity and profits.

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