

BENEATH THE SURFACE: GOING DEEPER WITH SEISMIC ASPHALT



1 In a simplified, elevator-pitch sort of way, can you tell us what SEISMIC is?

In it's simplest terms, SEISMIC Asphalt is designed to automatically detect optimum vibration frequency during asphalt compaction. The intelligent system optimizes compaction efficiency, enhances operator comfort and offers significant fuel savings.

To dive a bit deeper, let's talk a little science. Every physical object has a "natural resonance frequency." This frequency is like a unique "vibration speed" that the object naturally wants to move at. Think of a swing set, where there is a certain rhythm when you push someone on the swing. That's its natural frequency. When you push at their exact rhythm, you can push them high with minimal effort.

SEISMIC Asphalt automatically adjusts the vibration of the drums to get closer to the natural resonance frequency. This allows for maximum result with minimal effort while keeping the drum from double-jumping and losing compactive effort.

2 SEISMIC technology first came to dirt compaction, what did you learn from that launch that helped the transition of the technology to asphalt rollers?

I think first of all, we just saw so much success on the job site with dirt rollers using SEISMIC, we knew we had a winner if we could transition it over to the asphalt side of the business. However, because temperature is such an important element when rolling, we take asphalt temperature into account with the asphalt version of the SEISMIC system.

The beauty is that we aren't adding a lot of expensive components or re-engineering our drums. We use relatively simple sensors to measure vibration forces coming up through the drum and when we add in the temperature data, the software takes over and determines the optimum vibration frequency.

3 There have been other "smart" vibratory controls and intelligent oscillation - what makes SEISMIC different than those other technologies?

It gets back to the simplicity of the system really. None of our competitors adjust the vibration frequency like SEISMIC Asphalt does. These other systems generally have added costly and complex parts into their drums or require additional manual input data to give their software all the parameters needed.



SEISMIC Asphalt is the default setting, so you're ready to go after you turn on the roller. The operator only needs to choose the amplitude setting, so there is nothing else to do and they're ready to roll. It's simple, effective and efficient.

4 Which rollers is SEISMIC on asphalt currently available and why?

SEISMIC Asphalt will be standard on all of our Gen VI double drum "heavy tandem rollers" in the 8 to 13-ton classifications. Basically all of our 59" to 84" rollers. So, for those familiar with Dynapac models, this includes all of our CC2200-6200VI and CO2200-5200VI oscillation rollers.

5 Can SEISMIC be retrofitted onto other models or brands?

Technically we could retro-fit the sensors, wiring and software onto some later generation Dynapac models, but would entail a lot of work to install the field kit. It also won't work on other brands of rollers.

6 What direct benefits does SEISMIC provide contractors in terms of their work on an asphalt project?

There are several direct benefits, and it starts with optimal efficiency. When you utilize the full power and amplitude of each hit of the drum, you see uniform compaction

and a much lower chance of over-compacting the mix and breaking your aggregate.

What has been really cool, is that on some job sites, we've seen that contractors have been able to reduce their pass counts. Fewer passes while still obtaining target density helps keep your roller close to the paver, so you can pick up the pace and increase your daily yield.

7 In terms of the operators themselves, does SEISMIC offer any quality of life changes or improvements for them?

Conventional fixed frequencies are often 20-30% above the natural frequency of the material. SEISMIC



Asphalt operates closer to the natural frequency. The closer to the natural frequency you can get, the less wasted energy you get. Wasted energy is expressed in noisy “hits” and excess vibrations. SEISMIC Asphalt sounds and feels different as the roller is using a lower vibration frequency to get the same compaction.

For those that have been on a roller all day, you know that it can be pretty loud and naturally, you can be exposed to a lot of vibrations. SEISMIC Asphalt offers a more quiet environment and less vibration fatigue.

8 What does the addition of a new technology like SEISMIC on rollers mean for maintenance and service workers?

The byproduct of lower vibration levels is less wear and tear. The roller is not continually exerting the same high vibration forces, so we see extended life of drum components.

9 Whether you're an experienced roller operator or not, what's the learning curve for SEISMIC?

I can get you up and running in 60 seconds. Seriously, there really is no learning curve beyond understanding what the buttons do.

On a Dynapac roller with SEISMIC Asphalt, the operator turns the key, hits the start button and then chooses which amplitude they want to work with. After the machine warms up, you're ready to go.

Naturally there are some other daily pre-startup activities like checking oil and fluid levels and making sure the water system is fully operational, but good teams are already doing this before their shift starts anyways.

10 What is the projected ROI for SEISMIC on asphalt? Can it make a difference for a contractor's bottom line?

We're still putting together case study data for a true ROI, but I know for a fact, that when you use the ECO Mode setting, SEISMIC Asphalt can save you up to 25% on fuel. That can be about \$2,000 for every 1,000 hours of use. Add in fewer repairs due to less wear and tear, you're looking at lower total costs of ownership. ■



Scan here to watch No Edge Lines on YouTube to see the full episode on Driveways By Us.



Answers provided by:

Eric Booth

Product Manager Compaction
Dynapac North America

