



Bringing the Smooth

Innovative solutions improve the ride for motorists on section of major northwest interstate.



The concrete pavement in a 1.5-mile area of I-5 in southern Washington State was so badly worn that it was singled out by Washington State Department of Transportation (WSDOT) for rehabilitation. To do so, Granite Construction turned to an innovative paving solution from Topcon called SmoothRide and refined the finishing process using intelligent compaction. The result was a significant improvement in rideability — and a bonus for achieving those impressive numbers.

Company

Granite Construction
Watsonville, California

Project

Pavement Rehabilitation
Woodland, Washington

Topcon Products

SmoothRide

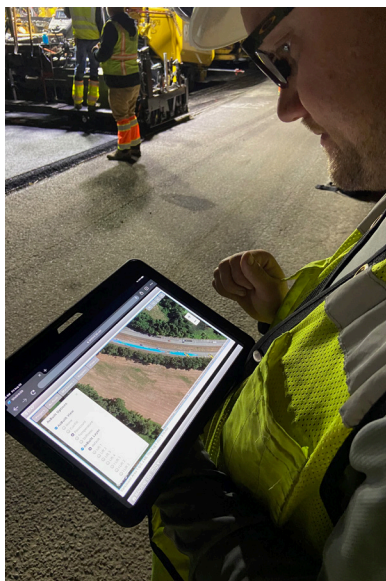
Topcon Dealer

Topcon Solutions Store
Portland, Oregon and Kent, Washington

“The concrete panels that made up this pavement were in rough shape before this project began,” according to Logan Cantrell, the company’s material and construction quality manager. “The IRI — a number by which roughness of the road is measured — was about 117, which though it falls into the ‘acceptable’

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category, was still a very rough ride. While it would have been easy to simply overlay asphalt on top of the failing concrete to smooth out some of the rougher areas, there would still be high and low spots, which needed real correction. An overlay alone was not the answer.”

After a complete “crack and seat” operation on the panels to minimize the risk of reflection cracks in the overlaid material, Granite moved on to the actual paving facet of the job. Working with Topcon and the Topcon Solutions Store, they set up the I-5 project as a demo.

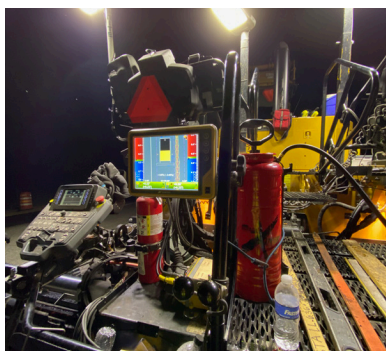
“We attached the RD-M1 scanner to one of our company vehicles and in roughly an hour, we had all the surfaces scanned and ready for processing,” said Cantrell. “That was important since WSDOT only gave us that long to scan the full three lanes of road.”

With the 3D model for the project loaded into their paver, Granite proceeded to lay down 9” of asphalt in four separate lifts measuring 2”, 3” and a pair of additional 2” lifts. According to Cantrell, the initial lift was actually slightly variable in depth to allow for any necessary correction.

“The beauty of this process is its ability to correct for high and low spots,” he said. “What’s being laid is based on what’s been scanned. So any bad areas on the surface are not just being paved over, they are actually being corrected, leaving a much better overall end-product — and increasing the life of the surface.”

Even the best-laid road surface can be ruined by over- or under-rolling — which can cause material segregation, surface cracks and raveling. To ensure these issues don’t impact their projects, Granite utilizes intelligent compaction (IC), which uses sensors to measure the temperature of the asphalt being compacted with each pass of the machine and graphically depicts it on screen in the cab.

The combination of SmoothRide and IC at the I-5 Woodland site accomplished Granite’s goals which were to gain familiarity with the solution and, at the same time, better position them for the possibility of capturing future project incentives. Cantrell said the improvement definitely turned some heads.



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“The project turned out great for us,” he said. “After completion, that IRI value of 117 had been reduced to 40 — an almost 300% improvement in smoothness. As a result, we should get about an 80% bonus for IRI on this job. This was a great opportunity for both Granite and WSDOT to see the changes SmoothRide can bring.”



A [full-length version](#) of this story is on the Topcon website.



Visit the [Topcon YouTube channel](#) to watch videos on the SmoothRide technology featured in this TAW.

