

# Topcon's SmoothRide Keeps German Road Resurfacing Project on Track



When construction company Matthäi was hired to resurface the busy B420 road around Fürfeld in Rhineland-Palatinate, Germany, it turned to Topcon technology to help meet tight deadlines and cope with tricky working conditions. The Topcon SmoothRide solution enabled Matthäi to optimize data collection and usage during the project to ensure the work was completed quickly and without complications.



One of the biggest challenges Matthäi faced in this project was to avoid heavy traffic jams caused by road closures. Because of this, the decision was made early on that work could only be undertaken during the weekends. To meet these tight deadlines, teams had to work across three weekends in total,

resurfacing a 1km section each time. Over the course of the project, this meant the use of around 40,000m<sup>2</sup> of asphalt and binder, with 9,000 tons of material being milled, shifted and re-laid.



Topcon's C-53 Intelligent Compaction System console installed in the milling machine's cabin.

## Turning weeks into days

Traditionally, the surveying process for road resurfacing is a time-consuming task that can lead to expensive errors. After hammering pegs into the ground every five metres along the side of the road, surveyors then need to measure the transverse profile every 20 metres, evaluate all the photos, draw up marking schedules and ensure that all the relevant data is documented. Using this method, it would likely have taken around two weeks to survey the complete road. Instead, the Topcon team utilized an RD-M1 scanner on the roof of a car and drove down the entire stretch of road, recording millions of points, in just 50 minutes.

"On the basis of a thinned-out point interval of 30cm, we received a complete image of the road," said Frank Pohl, surveying team leader at Matthäi. "We then discussed the critical zones and found solutions to various problems quickly. The team were able to smooth out uneven spots in the planning model that could have caused further problems, and optimized the geometry in such a way that the incline of the new asphalt surface was a constant 1.5%, leading to a perfect end result. The bends in the road were also given equally smooth gradients, and this traditionally time-consuming planning phase was completed in just two days."



Topcon's SmoothRide solutions enhanced the milling machine.

## Data-driven results

The next step in the process was to send the completed model to the milling machinery. [SmoothRide](#) uses GNSS for positioning, which allows users to mill only what is necessary, down to the exact millimetre, by milling the differences between the existing surface and the new design.

The pre-fitted milling machines were equipped with the 3D components. This took just 20 minutes to implement, according to Raimo Vollstädt, support engineer at Topcon: "With [SmoothRide](#)'s components, everything is automated, allowing the milling machine to know its position on the road at all times. This saves a lot of time and means that the machine never has to be adjusted, which is especially

beneficial when milling in the dark. What's more, multiple machines can be set to run simultaneously, which makes the process all the more efficient. This is crucial when working to tight deadlines."

The milling machines set off to mill along the 6m-wide and 1km-long section of road four times during the night, in line with the planned design. In total, 16 trucks were on site to transport the asphalt millings to the mixing plant where they were processed for reincorporation into the binder. The team needed to complete all milling works up to the slip road into Fürfeld before the road reopened, and this was actually achieved one hour ahead of schedule thanks to the efficient process.



The cabin with Topcon's C-53 Intelligent Compaction System console.

Due to the accuracy of the milling process, the asphalt could subsequently be laid ensuring consistent thickness. The paver was able to lay the binding layer evenly to a thickness of 5cm and the surface could be laid the same day.

The use of Topcon technology meant that the disruption for local residents was kept to a minimum, including in the interim weeks between road closures. In fact, the efficiency of the process resulted in the road being reopened earlier than expected.

Klaus Kormann, site manager for milling company GMS, was very impressed with the outcome: "Thanks to [SmoothRide](#), every part of the process ran smoothly, without any complications, and the technology delivered exactly what it promised. We have only ever had the best experience with SmoothRide and that's why we thoroughly believe in Topcon's solutions. With the process now completed, this stretch of the B420 has a new lease of life, offering a much better driving experience for all road users."

For more information about Topcon, visit [www.topconpositioning.com](http://www.topconpositioning.com).



**The milling machine finishing to specification on the outskirts of Fürfeld.**

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