



Press article

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In just one night: Asphalt replacement on federal motorway 81 – Joint installation using the TOKOMAT® process

Leverkusen, August 2020 - As one of Germany's busiest roads, federal motorway A 81 leads from Lake Constance to Stuttgart. Due to the huge amount of traffic, the motorway wears relatively quickly, making regular construction measures necessary to maintain the route. The work generally takes place in flowing traffic and under extreme time pressure. To ensure the best possible flow of traffic, the maintenance measures are normally carried out at night within just a few hours.

The strain on the A 81 is particularly high around the Autobahnmeisterei Herrenberg motorways agency and requires regular repair. The asphalt overlay is replaced over around 700 metres (or 350 metres of asphalt overlay, including the asphalt binder layer). But sections of this size can only be replaced in one night using special construction methods. This requires the old asphalt to be cut out so that joints can then be created on both sides of the milled surface using the TOKOMAT® process (Figure 1). The new asphalt can then be installed immediately. No subsequent cutting and pouring with a hot-poured compound is required, nor is there any need to cordon off the area a second time. After the asphalt has cooled, the section can be opened to traffic.

The great benefits of this process are that the joint is always in the right place (joint between the old and new asphalt) and that it significantly reduces the construction time. This minimises the risk of congestion and accidents.

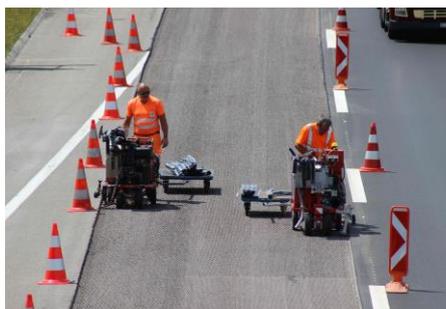


Figure 1: Finishing joints with the TOKOMAT®.

In 2019, the specialist company *Böhler GmbH Fugen- und Markierungstechnik* installed the joints as part of the construction work to maintain the A 81 on behalf of *Otto Morof Tief- und Straßenbau GmbH*. *Böhler GmbH* has been a partner of *DENSO Group Germany*, the inventor of the TOKOMAT® process, for over 25 years.

Axel Böhler, Managing Director of *Böhler GmbH*, confirms the fact that the TOKOMAT® process has proven itself in practice for more than 20 years: “We have been working with the TOKOMAT® for over 20 years and could not imagine a better process. The joints are formed quickly and reliably and no damage is caused.”

Even Morof is impressed with this method of construction, as explained by Site Manager Sarah Schwab: “The TOKOMAT® process efficiently creates joints in a completely reliable quality. For us as a construction company and for our clients, ensuring clean and reliable work by our partner companies is the top priority. And quality is simply a must. Both are absolutely the case for Böhler and the TOKOMAT® process.”



Fig. 2: Joint installation using the TOKOMAT® process



Fig. 3: TOKOMAT® joint along rolled asphalt

The TOK®-Riegel joint compound used in the TOKOMAT® process is, just like the bitumen joint tapes regulated in the ZTV Fug-StB, a joint material tested and approved according to the TL Fug-StB. The quality and compliance of the bitumen joint tapes and TOK®-Riegel with the standards are monitored by an external, accredited test institute three times a year. By contrast, standard EN 14188-1 for N1- and N2-type hot pouring compounds often does not require external monitoring for this area of application, which can impact on the quality.

In Germany, the health and safety regulation ASR A5.2 has also been in place since December 2018. This places greater demands on protected areas for employees on construction sites. For the half-sided installation of asphalt, joints are often located in the part of the lanes over which vehicles travel. If the joint is moved into the tyre contact area during road resurfacing, the constant flow of cars, heavy-goods vehicles and high temperatures place significant stress on the joint material.

If a hot-pouring compound is used in this joint, the new asphalt is first added and then, once the asphalt has already cooled, a joint is subsequently cut between the old and new asphalt layer. This joint is then filled with hot-pouring material. But, hot-poured joint compounds can stick to car tyres and – in a worst-case scenario – may be pulled out of the joint by the vehicle. If this happens, the additional repairs are time-consuming and costly, and will create huge traffic delays.



Fig. 4 and 5: Raised hot-pouring compounds

By contrast, if a joint edge is created first during road resurfacing, to which a joint tape is applied (e.g. in the form of a mechanically extruded joint tape using the TOKOMAT® process), this joint tape bonds firmly with the new, hot asphalt during installation. The material composition of the bitumen joint tape and the permanent bond with the two layers of asphalt means that it cannot be pulled out of the joint by car tyres.

DENSO Group Germany

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