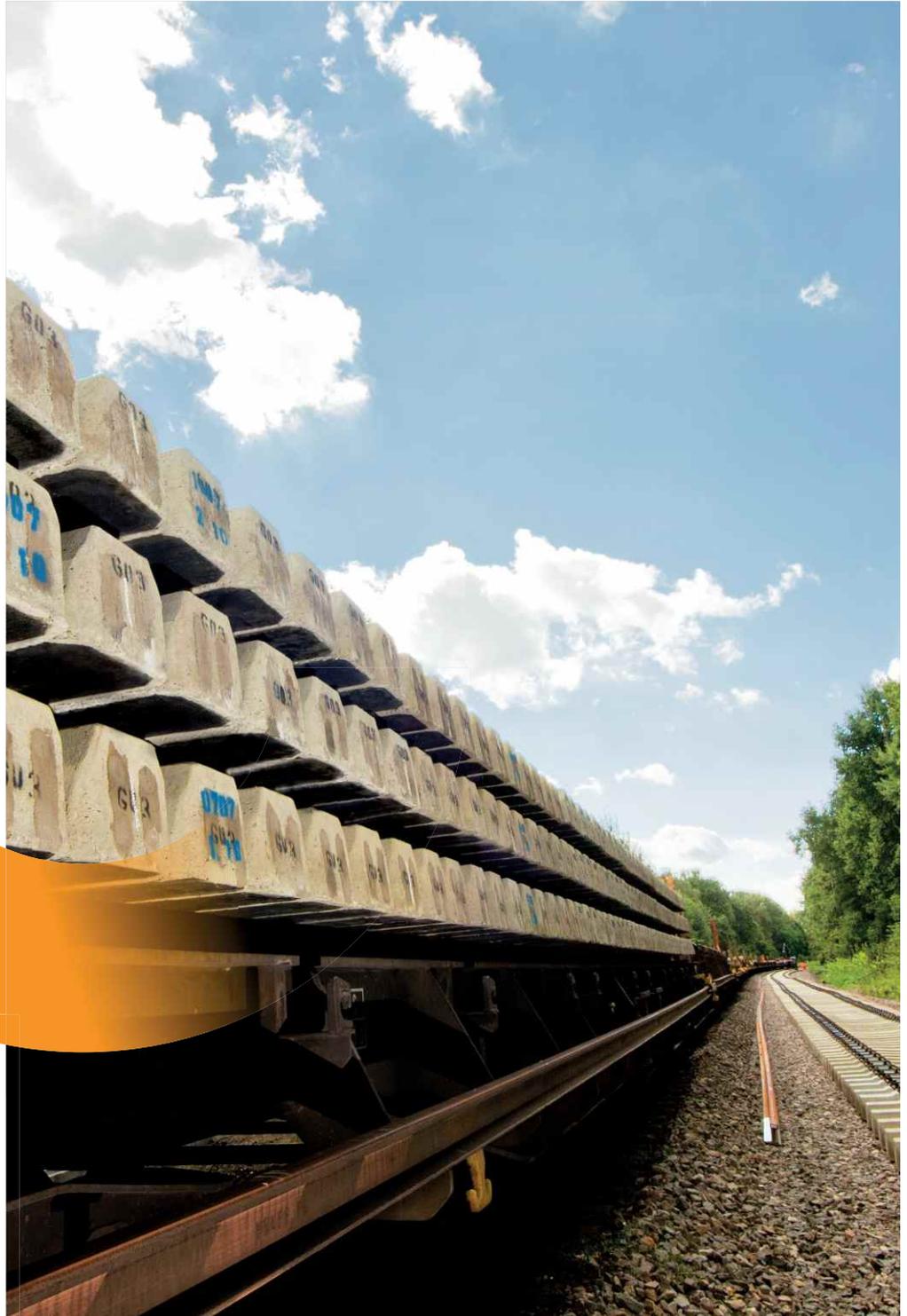


RAILWAY UPGRADE OF BERLIN-COTTBUS LINE

CASE STUDY

Berlin-Cottbus Line
(DE)

VIBRATION ISOLATION AND
PROTECTION OF THE ENTIRE
RAILWAY SUPERSTRUCTURE.



getzner

DEVELOPMENT OF THE BERLIN–COTTBUS RAILWAY LINE

THE PROJECT

In 2010 Deutsche Bahn (DB) upgraded the heavily used railway line between Berlin and Cottbus, which lies in the county of Brandenburg. Following the southern section of the Berlin–Cottbus line, the middle section of the route was also upgraded to allow trains to run on it at higher speeds.

The entire railway track structures were replaced along a 60 km long section between the spring and autumn of 2010. The challenge was to protect nearby buildings from vibrations in close proximity to the track with efficient protection against vibrations, despite the faster train travel which had been planned.

Moreover, in order to keep this extensive project on budget and on schedule, the complete track structure could not be removed. Since the completion of the construction work, the track which was previously designed to accommodate a top speed of 120 km/h can now be used by trains travelling at speeds of up to 160 km/h and at greater frequency, without causing additional structural stress due to vibrations or noise.



THE GETZNER SOLUTION

Padded railway sleepers as protection against vibrations

Getzner worked closely with DB to develop a special polyurethane under sleeper pad with effective acoustic damping for the Berlin–Cottbus line. The pad was designed within the scope of the research project “Quiet train on real track” (LZarG) which was aimed at developing new technologies for lower-noise railway traffic. The PUR under sleeper pads dampen the vibrations of trains as they pass through built-up areas.

The new under sleeper pad has been specially tailored to meet the requirements of these projects. “DB already had good experience of working with us before we embarked upon this major project. Faith in our expertise and in our ability to deliver the right product was key to securing the order. So far, Berlin–Cottbus has

been the biggest railway project of its kind in the world involving the use of under sleeper pads to protect against vibrations. All in all, some 52,000 sleepers and 17 points were fitted with under sleeper pads made from our material," pointed out Christian Dullinger, project manager of the Rail Division at Getzner's plant in Grünwald near Munich, emphasising the significance of this major project. By using under sleeper pads, specialists were able to integrate the vibration protection without completely removing the track structure.

Product development in close cooperation

Getzner developed the new under sleeper pad which was designed to suit the Berlin–Cottbus line in close cooperation with DB's Technology and Acoustics Department in the course of the LZarG research project. The solution reached production stage and ultimately received approval by DB Technology.

While the R&D work was in process, Getzner had the product tested at the Technical University of Munich. Those tests have confirmed the high quality and durability of the product. "We conducted a rigorous series of tests in a very short time. We now have a well-engineered, highly resilient product in use. In addition, compared to conventional solutions, the under sleeper pads also boast longevity on account of the improved way in which they are connected," said Christian Dullinger, summing up the special features of the major order.

Just-in-time logistics

Dullinger described how "this order presented a big challenge for project management, quality management, production and logistics – around 30 people worked on its successful implementation." Finally he stated that "Such large volumes posed significant challenges: Not only did we manage to coordinate the internal processes excellently, we were also able to coordinate the timing of the manufacturing of the sleepers and under sleeper pads with our customers on site to great effect. By virtue of its sheer scale, this project provided us with valuable experience, which will benefit our clients in future projects."

Given the high production capacity utilisation, the new elastic layer for the sleepers was produced at the Getzner plant in Bürs under great time pressure and under the most stringent quality controls. Liaising closely with the company that manufactures the sleepers, Getzner delivered over 50,000 under sleeper pads to Frankfurt and to Neumarkt in der Oberpfalz between June and September 2011. They were then affixed to the sleepers at RAIL.ONE's two plants. As this then meant that sleepers could be delivered to the track with the under sleeper pads already in place, which made installation quick and straightforward.



Getzner created pads for 50,000 sleepers along a section of over 60km between Königs Wusterhausen and Lützen.

FEEDBACK

» ***"The cooperation with the Getzner team was exemplary. The quality of the under sleeper pads for the sleepers was consistently high and enabled us to affix them to our concrete sleepers without any trouble. Deliveries were excellently coordinated: they arrived on time and in the agreed volume."***

Gundolf Spitzner, Head of European Sales, RAIL.ONE GmbH





ADVANTAGES

Getzner's specially developed under sleeper pads for the Berlin-Cottbus line provide effective vibration isolation and protect nearby buildings, even with higher train speeds and increased frequency. The solution enabled efficient installation without the need to fully remove the existing track structure, ensuring minimal disruption and cost. The pads deliver reliable acoustic damping and durability, resulting in quieter rail operations, reduced structural stress, and long-lasting comfort for both operators and communities along the route.

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|-----------------------|---------------------------------------------------------------|
| Customer | Deutsche Bahn AG |
| Track length | Around 60 km |
| Solution | Under sleeper pads for around 50,000 sleepers and 17 turnouts |
| Speed | Up to 160 km/h |
| Implementation | Autumn 2011 |

Additional references can be found on our website:



[getzner.com/
references](https://www.getzner.com/references)

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