

HENNECKE PRESS RELEASE

Innovation in track construction

Ballast bed partly foamed with Durflex® for rail-guided transport

A newly developed technology is set to enormously improve track bed systems with regard to airborne noise, structure-borne noise and stability.

Together with our partners Frenzel-Bau and Bayer MaterialScience, extensive pre-tests have been conducted at the Hennecke PUR technical lab in Birlinghoven to investigate the raw material and the injection pattern as well as the necessary parameters. The aim of this foam injection process is to completely fill the hollow spaces within the ballast with a polyurethane (PU) foam, thus preventing the ballast material from moving whenever trains cross the rails.

DURFLEX® is a system that not only reduces the noise emission but also operating and lifecycle costs. The service life of the tracks is prolonged considerably. Repacking becomes obsolete, track deformation is avoided with a resulting reduction in the number of broken sleepers and rails, and network availability rises notably. Thus, DURFLEX® represents a further development of the existing railway track systems both in economic and ecological terms.



Based on the experience acquired in the course of the numerous tests, a specially-designed high-pressure metering machine (Topline HK650) was installed in a container of a Deutsche

Bahn train. In line with the evaluated parameters and results, a triple deviation mixhead (MX type) was selected for injecting the metered mixture. Using an online batch process (mixing of time-critical components), the machine was optimally matched to the developed raw material system Bayflex®.

In addition, the machine was equipped with a newly developed control and operating system which manages, controls and archives the metering parameters and the resulting foam injection for each of the sleepers.

The final test of the machine and raw material system was carried out on a former loading/unloading siding of the Bonn-Beuel train station, where a rail system specially built for this purpose served as test section. The results were presented, among others, to Mr. Armin Keppel, president of the Federal Railway Authority, the Mayor of the city of Bonn, Ms. Bärbel Dieckmann, and the press.



By including a foamed track section into the main intercity line 1720 from Hamburg to Hanover near Bad Bevesen-Uelzen, km 101.0-101.5, we have now broken new ground in track technology.

Once rail traffic in this section recommences, we expect the real-life results to prove the reduction of the above-mentioned parameters.


We are excited about the knowledge we have gained, and we are looking forward to implementing similar projects in the future.

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