

APPLICATION EXAMPLES

A clear path for stable noise protection: frictional connection between the pillars and the steel bridge thanks to the Liquid Shim® MM1018



The noise barriers on a Berlin railway bridge, which are up to five meters high, are exposed to high loads. This poses special technical challenges for the force-locked gap compensation of the flange connections, which connect the 15 pillars with the steel bridge.

As part of the expansion of the Berlin S-Bahn line Dresdner Bahn, great attention was paid to noise protection. Particularly high demands were placed on the noise protection walls, which are up to five meters high, due to the inner-city location of the construction site and the associated proximity to residential buildings. In order to secure the frictional connection of 15 noise barrier posts on a steel bridge in a permanent, highly precise and form-fitting manner, the gap compensation was carried out with the liquid shim® MM1018 from DIAMANT Polymer GmbH. MM1018 is a highly filled metal polymer for full-surface and non-positive compensation or filling of inaccuracies and bumps between metal elements.

Noise protection walls on railway tracks that lead over a steel bridge are exposed to exceptionally high loads. In addition, they not only have to absorb the noise of rail traffic, which is made up of parts from wheels and rails. In addition, the bridge body is added here as a source of noise and vibration. That is why particularly efficient measures are required here to permanently ensure noise protection in the surrounding residential areas.

Particular technical challenge for the non-positive gap compensation

This poses special technical challenges for the flange connections between the noise barrier posts and the steel bridge. So that these bolts do not loosen even under permanently high loads - a problem that often involves considerable repair costs and downtime - the connecting flanges must be flat and tight down to the millimeter so that no excessive stresses can build up and the components can meet the high demands of a long service life in rail traffic is sufficient.

In order to achieve the best possible adhesion between the 15 support posts and the steel bridge in Berlin, with a base plate of 460mm x 380mm and a wedge to be filled from 0 to 5mm, DIAMANT Polymer GmbH was commissioned to have a team of experienced specialists carry out the gap compensation on the flange connections.

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When it comes to safety, stability and efficiency, the Liquid Shim® MM 1018 of the DIAMANT Polymer GmbH demonstrates its strengths. With MM1018, bumps, gaps and exceeding tolerances can be treated compensate connections of steel components quickly, easily and efficiently. The Liquid Shim® provides a non-positive and positive connection between steel components.

„We are pleased to have made a contribution with our products to securing population-friendly noise protection on a highly frequented railway line in the federal capital,“ summarizes Carsten Kunde, Managing Director of DIAMANT Polymer GmbH.

Positive injection of the liquid shim MM1018

Two perfectly matched versions of the high-performance polymer were used on the Berlin steel bridge. MM1018 SEAL is a fast curing metal polymer for pressure tight joint sealing. It is used in conjunction with the injection of the low-viscosity gap-filling material MM1018 FL to seal cavities to be injected and prepare them for use with MM1018 FL.

The application of the corrosion and weather resistant MM1018 SEAL is through cartridges with compulsory mixer relieved. MM1018 FL is the liquid variant of the highly filled metal polymer for casting or injection. The product is currently the only one of its kind to have general building authority approval for use between steel components.