EXPANSION JOINT RENEWAL WITH ‘ZERO’ IMPACT ON TRAFFIC

How to minimise the impact on traffic during replacement of expansion joints?

Expansion joints are delicate and highly stressed structural bridge components that will almost certainly need to be replaced several times during the lifetime of a bridge.

In order to minimise traffic disruption during expansion joint replacement works, it is most beneficial to initially select the right type of expansion joint.

Traffic volumes are high on today‘s bridges - so disruption is a major problem

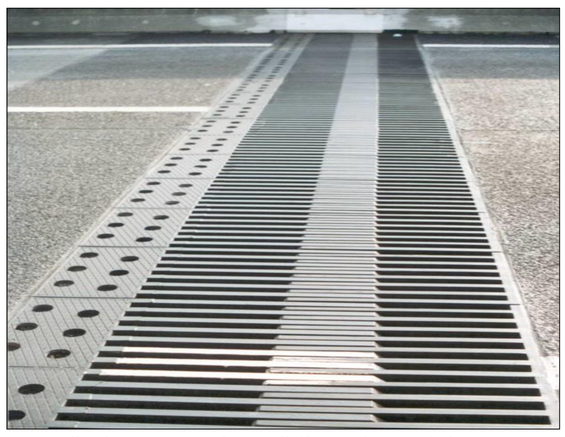
Such disruption can be caused during replacement of bridge expansion joints

Large fly-overs can be used to keep traffic moving during replacement works

The right product decision for traffic management: the Tensa®Flex Sliding Finger Joint

Product Description

- Tensa®Flex Sliding Finger joints can accommodate both horizontal & vertical movements and rotations
- The joint is a flexible steel elastomeric bonded system which consists of two asymmetric parts
- The fingers of the upper part are installed with a downward pre-tension, thus applying permanent pressure to the opposing sliding surface of the lower part



Installed Tensa®Flex Sliding Finger joint

Key Benefits

- High driving comfort
- Low noise emission
- Modular system, easily installed without crane and easily replaced
- Simple system, without moving parts, that allows rotations and vertical movements
- Shock-absorbing characteristics protect the bridge structure
- Highly resistant to environment impacts

Section through Tensa®Flex Sliding Finger joint

“Mini-Fly-Over” traffic management solution to allow installation with “zero” impact on traffic

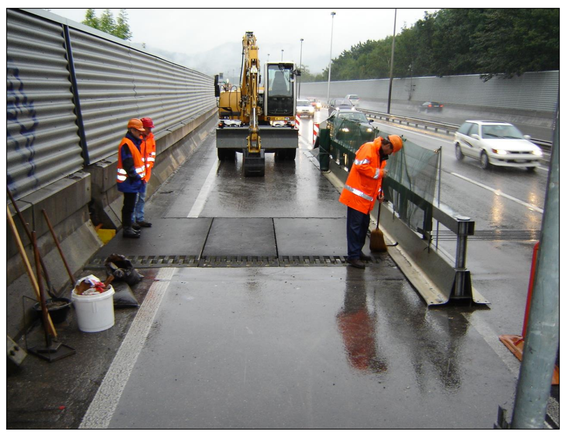
Step-by-step illustration of installation on one of Switzerland’s busiest bridges (the Felsenau Viaduct, Bern) which carries 100,000 vehicles per day:

Step 1: One lane was closed during a weekend (when traffic was light)

Step 2: This allowed the existing joint to be removed without impacting on traffic

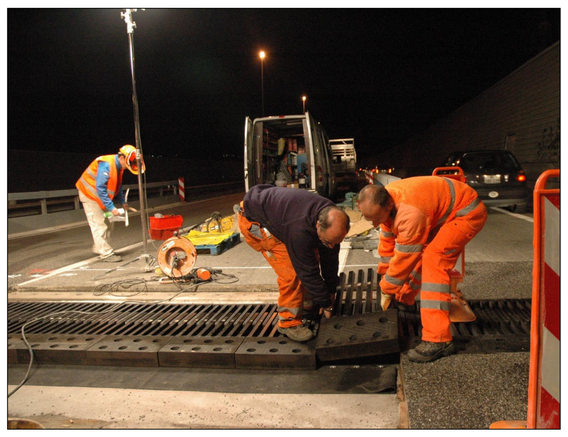
Step 3: Reinforcement was then placed (also during the weekend)

Step 4: Mini-Fly-Over finger plates were then placed and secured, to carry traffic

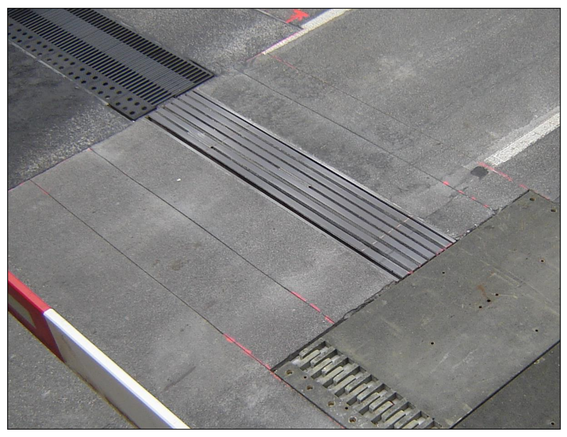


Step 5: On Monday morning the lane was re-opened to traffic

Step 6: That night, the Mini-Fly-Over was removed to allow work to proceed



Step 7: On the last night shift, the Tensa®Flex joint was installed

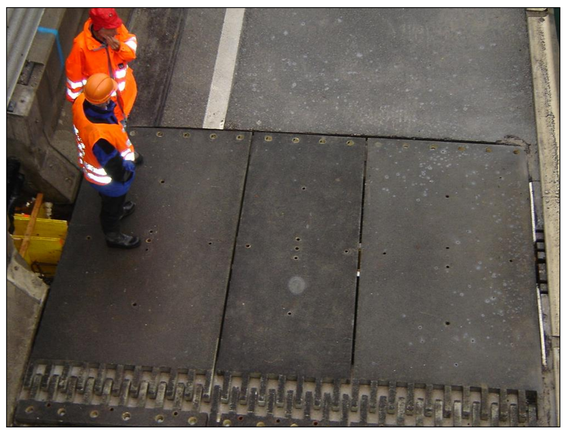


Step 8: At all times (all weekdays), all 3 lanes could be used by traffic

Main Conclusion: Traffic disruption during expansion joint replacement works <u>can be avoided</u>

Tensa®Flex Sliding Finger Joints are most valuable for the many benefits they offer to bridge builders and end-users, such as quietness, comfort and durability.

When it comes to the replacement of an existing expansion joint using the “Mini-Fly-Over” system, the Tensa®Flex Joint becomes invaluable for its ‘zero’ impact on traffic.



Fully installed Mini-Fly-Over construction

The joint of the Felsenau Viaduct after replacement had been completed

This important structure could thus stay in service at all times, thanks to *Tensa®Flex*