

# City railway tunnel

Stuttgart



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**Two new tunnels are being built in the Stuttgart Europaviertel. A mass-spring system with the Egcodorn® DND is being used for the purpose of acoustic decoupling.**

The construction of the new Stuttgart railway station means that part of the current metropolitan railway line U12 has to be relocated. Furthermore, the "Milaneo" shopping centre in the Europa quarter will be connected by two new tunnels about 600 metres in length. A mass-spring system was used for the acoustic decoupling.

The construction work in Stuttgart's city centre encompasses both the manufacture of the two tunnels as well as the interior finishing of the tunnels, including a mass-spring system. The structure is expected to be completed in 2016.

The client is the Stuttgarter Straßenbahnen AG (SSB), which provided a draft plan during the tendering phase. Acoustic decoupling was envisaged in the vicinity of the library on Mailänder Platz in order to reduce vibrations. Elastically mounted track supporting elements in the form of precast elements – a so-called mass-spring system – are used for this.

In search of a special solution for the coupling of the joints, the "Technisches Büro Konstruktiver Ingenieurbau Stuttgart" approached MAX FRANK in mid-2014. That was followed by a close cooperation between Züblin and MAX FRANK in order to verify this technically very demanding detail. The cramped spatial conditions coupled with an unfavourable geometry of the precast elements in the longitudinal track direction led to extreme high stressing of the joints.

The coupling of the joints was created with the Egcodorn® DND shear force dowel. Ultimately a further specialist was called in – the engineering office "Grawe + Bertram" – and an engineering model specially tailored to the case was developed. The client's special

## Type of building:

### Clients and Developers:

Stuttgarter Straßenbahnen AG (SSB),  
Stuttgart

### Engineers/ Specialist Planners:

Ed. Züblin AG - Zentrale Technik -  
Technische Büro Konstruktiver  
Ingenieurbau Stuttgart  
GRAWE + BERTRAM INGENIEURE,  
Aachen  
[www.grawe-bertram.de](http://www.grawe-bertram.de)

### Building contractor:

Ed. Züblin AG - Direktion IU  
Tunnelbau

### Distributor:

Heinz Lindner GmbH, Fellbach  
[www.heinz-lindner.de](http://www.heinz-lindner.de)

### Completion:

2016

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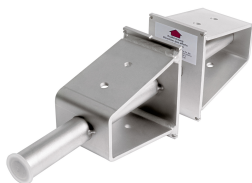
requests as well as modifications of the Egcodorn sleeve for simplifying the assembly in the precast plant were also accounted for here. Grout pockets were provided on the building site of the shear force dowels for assembly on the building site.

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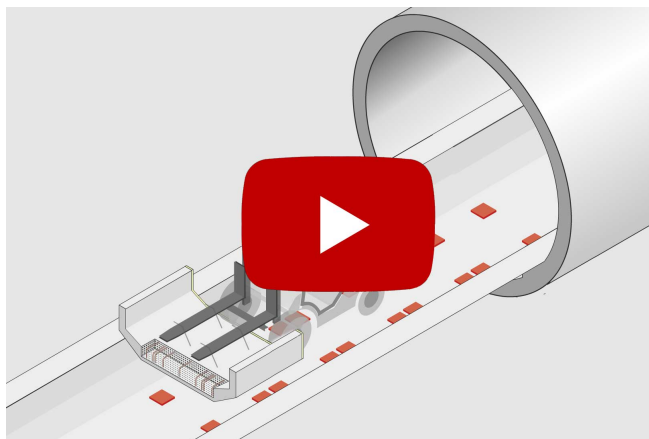
## Products used:



Shear force dowel Egcodorn®  
DND



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Floating slab track with shear force dowel Egcodorn® DND for  
dynamic forces

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