



Press Release

HERRENKNECHT

About-turn for "SUSE" in the Filder Tunnel

August 22, 2018

Stuttgart/Schwanau, Germany

In late July the moment has come: tunnel boring machine "SUSE" (Ø 10,820 mm) has completely excavated the western tube of the Filder Tunnel. Now, in a specially built cavern, the approximately 120 meter long Multi-mode TBM from Herrenknecht is disassembled into individual parts and turned around underground. From the fall of 2018 it is due to commence excavation work in the remaining 3.4 kilometer section of the eastern tube.

_____ "Stuttgart-Ulm schneller erreicht" (Stuttgart-Ulm reached faster) is behind the acronym used to name the Herrenknecht tunnel boring machine "SUSE" (Ø 10,820 mm), which successfully finished its third shield drive in the Baden-Württemberg state capital in late July. With the end of the advance the crew from joint venture ARGE ATCOST 21 (Porr Bau GmbH Tunnelbau, G. Hinteregger & Söhne Baugesellschaft m.b.H., Östu-Stettin Hoch- und Tiefbau GmbH, Swietelsky Baugesellschaft m.b.H.) has now completed the western tube of the approximately 9.5 kilometer long twin-tube Filder Tunnel.

For the final project breakthrough, "SUSE" still has to excavate a 3.4 kilometer long section in the eastern tube. The tunnelling work is scheduled to start in the fall of 2018. Prior to that, the approximately 2,000 tonne and 120 meter long TBM will be disassembled into several parts and turned around in a specially built cavern inside the rock mass. "Such an about-turn underground with a TBM of this size is absolutely exceptional," says Dr.-Ing. E. H. Martin Herrenknecht. "This shows what extraordinary technical feats are being achieved during the construction work on the Filder Tunnel. Hats off to the site crew!"

The tunnel section is located in heterogeneous rock strata and overcomes a total height difference of 155 meters with a slope of up to 2.5 percent. Due to the complex project requirements, initially no mechanized tunnelling was planned for the Filder Tunnel. However, the particularly flexible and convertible Multi-mode TBM machine type from Herrenknecht has convinced the client Deutsche Bahn of the advantages of mechanized tunnelling over a large part of the tunnel route.

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In the upper section of the Filder Tunnel the convertible Multi-mode TBM "SUSE" worked in EPB mode with screw conveyor muck removal, in the lower Filder Tunnel in open single-shield mode with belt conveyor discharge. The only area the machine was not used was in the geological transition zone, where miners removed the material from the rock using diggers and loosening blasting.

The Filder Tunnel is the longest on the new line between Stuttgart and Ulm, which will link the new central railway station with the Filder Plain. As a result of the railway project, travel times between Stuttgart and Ulm will be almost halved. Around ten million passengers per year will benefit from the scheme. Contractors working on other tunnelling sections of the Stuttgart-Ulm railway project are also relying on Herrenknecht tunnel boring machines. For example, the two Herrenknecht machines "WANDA" and "Sibylle" (Ø 10,820 mm) are in operation for the Albvorland Tunnel. The EPB Shield "Käthchen" (Ø 11,340 mm) recently completed excavation of the 8.8 kilometer long Bossler Tunnel.

Project data

About-turn for "SUSE" in the Filder Tunnel

MACHINE/PROJECT DATA S-738/S-746

Machine type: Multi-mode TBM

- › Shield diameter: 10,830 mm
- › Drive power: 4,200 kW
- › Tunnel length: 9,468 m, Advance length 15,330 m
- › Geology: heterogeneous soils (Lower Jurassic & Rhaetic, lumpy marl, sandstone with marls and clay, unleached Gypsum keuper)
- › Customer: ARGE ATCOST 21 (Porr Bau GmbH Tunnelbau, G. Hinteregger & Söhne Baugesellschaft m.b.H., Östu-Stettin Hoch-und Tiefbau GmbH, Swietelsky Baugesellschaft m.b.H.)
- › Client: Deutsche Bahn AG

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Photos

About-turn for "SUSE" in the Filder Tunnel



Photo 1

In late July, "SUSE" has completely excavated the western tube of the Filder Tunnel. From the fall of 2018 she is due to begin her fourth and final shield drive of about 3.4 kilometers in the eastern tube of the Filder Tunnel.



Photo 2

As a convertible Multi-mode TBM, "SUSE" (Ø 10,820 mm) can handle even the most difficult conditions, such as different rock strata and a total height difference of 155 meters with a slope of up to 2.5 percent. In the upper section of the Filder Tunnel the TBM works in EPB mode with screw conveyor muck removal, in the lower part in open single-shield mode with belt conveyor discharge.



Photo 3

The multi-mode TBM "SUSE" is being turned around in a specially built cavern inside the rock mass. The approximately 120 meter long TBM will be disassembled into several large parts. Subsequently, each part will be transported through the turning cavern and then reassembled for the drive in the opposite direction.



Photo 4

The Filder Tunnel is the longest on the new line between Stuttgart and Ulm and will link the new central railway station with the Filder Plain. As a result of the railway project, travel times between Stuttgart and Ulm will be almost halved in future. Around ten million travelers will benefit from the project each year.

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For further information: Please contact us.

Herrenknecht AG

Herrenknecht AG is the only company worldwide to deliver tunnel boring machines for all geologies and in all diameters – ranging from 0.10 to 19 meters. The product range comprises tailor-made machines for traffic, supply and disposal tunnels, technologies for routing of pipe lines, as well as additional equipment and service packages. Herrenknecht also manufactures excavation equipment for vertical and inclined shafts as well as deep drilling rigs.

The Herrenknecht Group achieved a total output of 1,208 million euros in 2017. The independent family business employs over 5,000 people worldwide, including 180 trainees. With 76 domestic and overseas subsidiaries and associated companies working in related fields, Herrenknecht provides comprehensive fast and targeted services close to each project and customer.

› <http://www.herrenknecht.com/en/references>

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