

Next-Generation Herrenknecht Mixshield Machines for Complex Road Tunnelling Projects

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ABSTRACT

This presentation focuses on the latest development in Mixshield technology for complex road tunnelling projects. The journey of Mixshield development began in 1972, when the German contractor Wayss & Freytag introduced the Hydroshield, which later became the conceptual foundation for today's well-known Herrenknecht Mixshield. Early shield machines were in Metro size. In 1996, with 14.2 m diameter, a first bigger sized Mixshield was deployed for a major road tunnel under the Elbe River in Germany. This machine featured the first-ever accessible cutterhead - a breakthrough in shield technology.

Since then, the advancement of Herrenknecht Mixshield machines has been consistently driven by the increasing complexity of global infrastructure projects. In this presentation, we will showcase the state-of-the-art Mixshield designs for two important mile stone road projects:

Hampton Roads Bridge Tunnel , USA

Jiaozhou Bay 2nd Sea Crossing, China

Additionally, we will highlight the technical differences between the traditional Mixshield design and the latest developments, which are closely resemble multi-mode shield TBMs in functionality and adaptability.

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