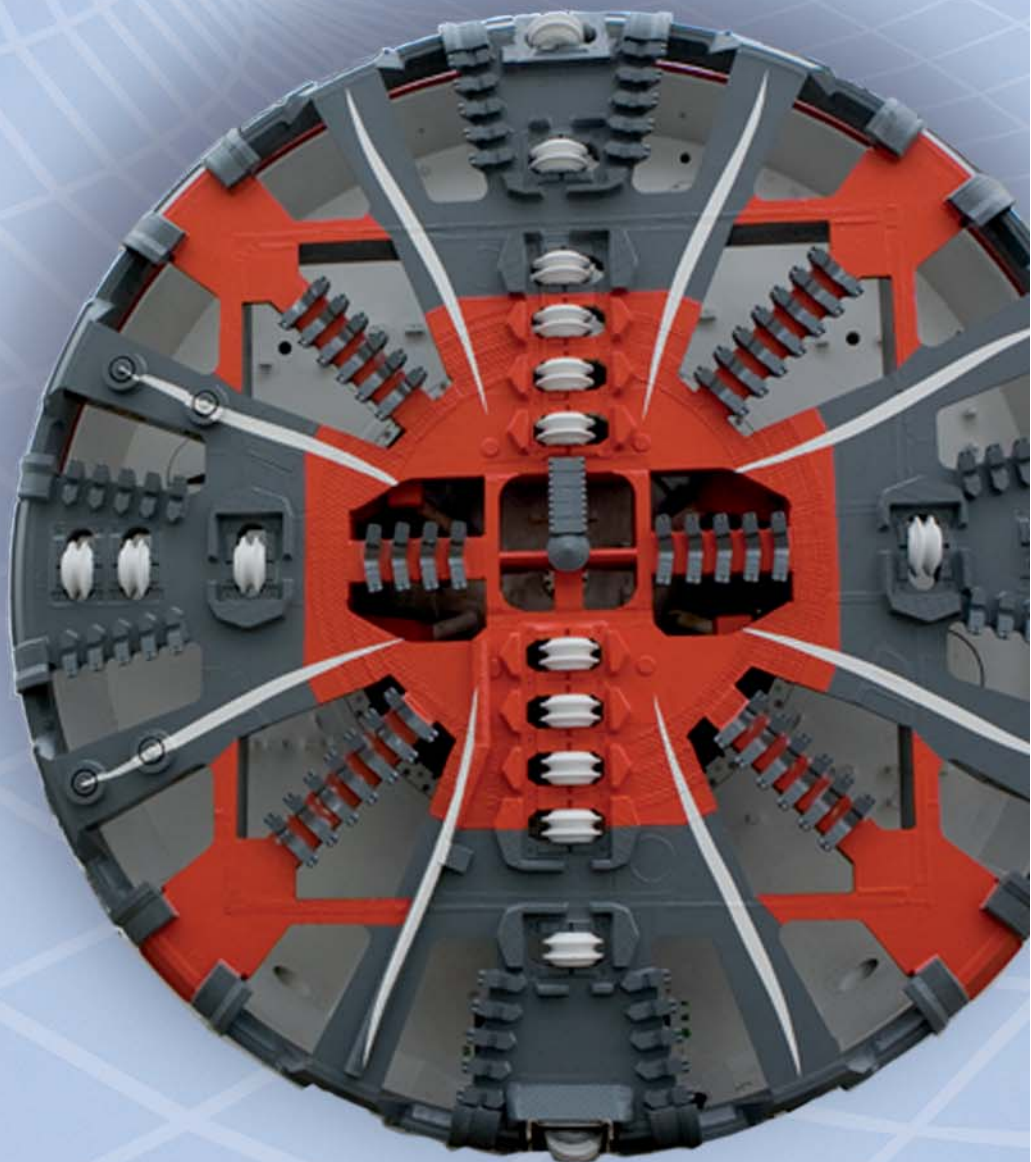


Tunneling Technologies

Centre of Expertise for
Equipment Technology



Connections for Life



Wayss & Freytag Ingenieurbau

We deliver Overall Concepts

“Tunnel Technologies” as part of the Tunnelling Department of Wayss & Freytag Ingenieurbau AG, headquartered in Frankfurt, provides customized equipment solutions for all types of mechanized tunnelling that suit our clients’ requirements.

Our services are based on the experience gained on over 200 km of tunnels, driven using tunnel boring machines (TBMs) operated in slurry shield, earth pressure balance (EPB) and hard rock mode.

Our services range from the rental of individual items such as small machines to the delivery and operation of complex large-scale installations to suit all geological conditions.

On request we can provide skilled and experienced workers or whole working teams accompanied by Site Managers to operate the plants.

Range of Services

- Draft design**
 - Calculation, Dimensioning and Quality Control
 - Project-specific Preparation and Provision
 - Delivery

- Set-up**
 - Function Tests and Commissioning

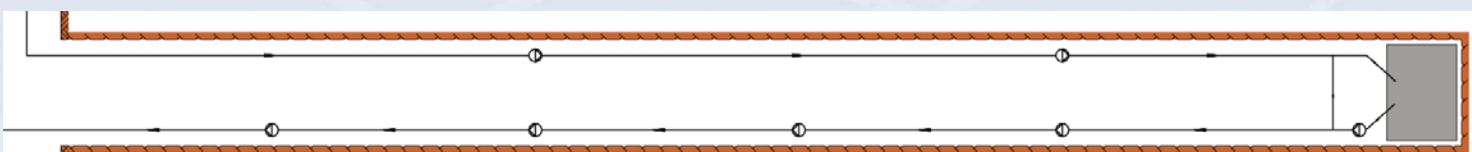
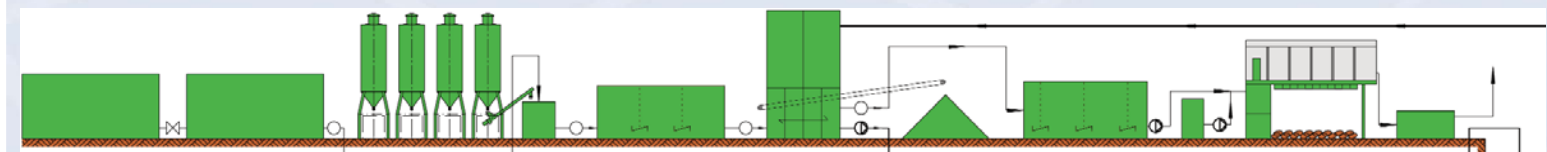
- Operation**
 - Dismantling and Transport Off-Site



Overall Layout JV Weinbergtunnel Zurich, Switzerland



Overall Layout JV Corrib Tunnel Project, Ireland



Separation and Mud Treatment

Separation plant (STP):

- Separation plants in all sizes
- Belt conveying systems
- Transfer pumps, inner pipe systems
- Encapsulations



Discharge of Separation Plant



Multi Cyclones

Mud Treatment (MTP):

- Filter presses
- Centrifuges
- Flocculation stations
- Neutralizations
- Transfer pumps, inner pipe systems



Filter Cakes

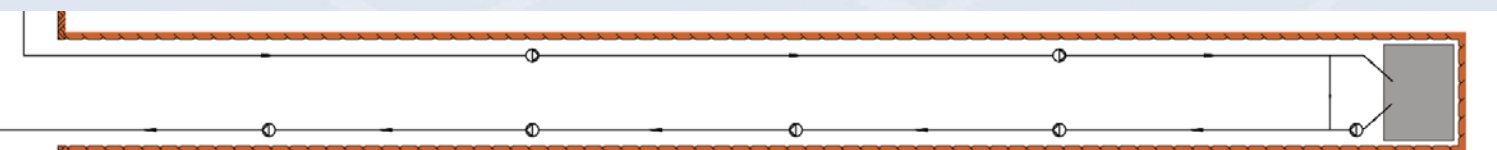
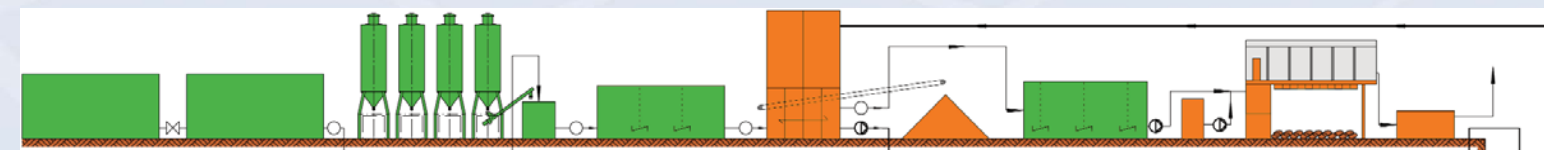


Filter Plates

Separation Plant JV Emstunnel, D -NL



Filter Presses



Customized System Engineering

Slurry Circuit for conveying of excavated material:

Feed – and Slurry Pumps, Frequency Converters, Transformers
Pipes and Fittings

Batching Plants:

Bentonite Batching Plants
Mortar Mixing Plants for Site- and Ready Mixes
Silo Systems
Draft design and Laboratory Analysis of:
- Mortar Mix Design for Tail Gap Grouting
- Mix Design for Bentonite Slurry Suspension

Compressed Air Stations:

Compressed Air Stations with Electrical and Diesel Compressors
Compressed Air Vessels, inner pipe systems
Start-stop-automatic systems

Tank / Container Systems:

Water
Fresh Bentonite Slurry Suspension
Waste Bentonite Slurry Suspension
Agitators, transfer pumps and inner pipe systems

Booster Stations and Cooling Water Systems

Tunnel Ventilation



Compressed Air Station



Fire Fighting Equipment



Bentonite Batching Plant



Tank System

Health and Safety:

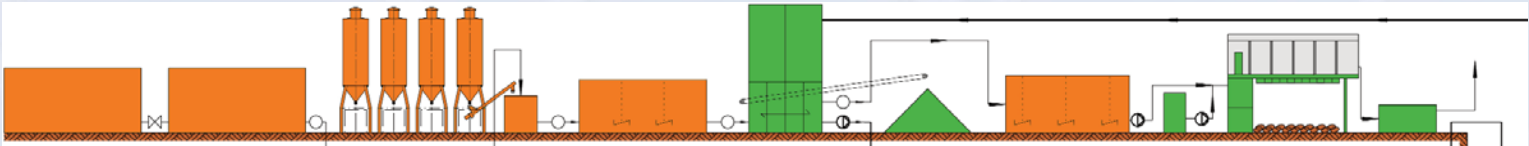
Planning and execution of Work Safety concepts (Standard of Oil and Gas Industry)
Rescue Containers
Fire Fighting Equipment
Gas Monitoring
Self-Rescuer
Services

Electrical Installations:

Planning and execution of Electrical concepts
Equipment and Material



Feed- and Slurry Pumps



Wayss & Freytag Ingenieurbau AG

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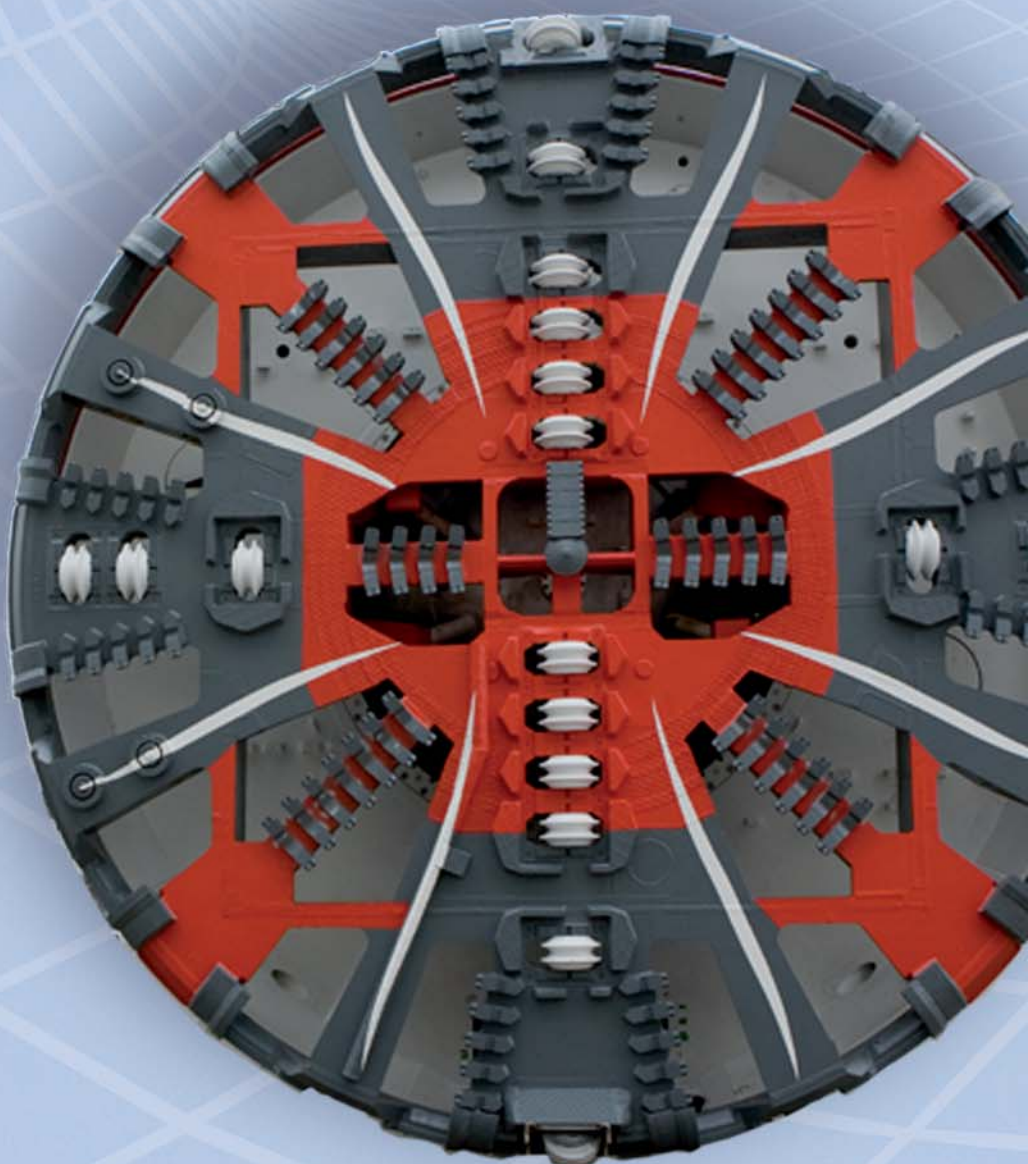
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