TSP - Tunnel Seismic Prediction

Tunnel Boring Machine projects*

References

*extract of TBM projects

Austria
- Brenner Base Tunnel, Strabag/Salini-Impregilo, ∅7.8m Open TBM in strongly foliated and unconsolidated quarzitic Phyllites with low dip and strike angles.

Germany
- Zuckerberg Gallery, Ed. Züblin AG, ∅3.4m Open TBM in various limestone formations with faults and karst

Dominican Republic
- Construtora Norberto Odebrecht S.A., Proyecto Hidroelectrico Palomino, ∅4.5m Double-Shield TBM in marl, sandstone, limestone, andesite, basalt and granodiorite.

Iceland
- Karahnjukar Hydropower Project, Landsvirkjun Power Company, ∅7.6m Main Beam TBM in basalt, pillow lava, dykes and faults

India
- Mumbai Water Supply, Hindustan Constr. Comp., ∅3.6m Open TBMs in granite and faults
- Parbati Hydroelectric Project II, National Hydro Power Company (NHPC), ∅6.8m Open TBM in gneiss, quartzite, schist, phyllite, faults and shear zones

Iran
- Cheshmeh Langan Water Supply, Esfahan Regional Water Board, ∅3.9m Open TBMs in various limestone formations thickly bedded, partly strongly faulted, fractured and sheared
- Alborz Tunnel, Tallon Company, ∅5.2m Open TBM in andesite, tuff, limestone schist, sandstone, quartzite
- Water Supply & Transfer Project Kouhrang III, Tablieh Construction Company, ∅4.3. Open TBMs in limestone dolomite and karst cavities
- Nosoud Tunnel, Iran Water & Power Resources, Dolomite with interbedded limestone and fracture zones

Italy
- Pont Ventoux Hydroelectric Power Plant, Astaldi, ∅4.75m Gripper TBMs in gneisses, mica schists and faults
- La Maddalena Tunnel, TresEsse, ∅6.3m Main Beam TBM in gneiss and micaschist and faults

Malaysia
- Pahang-Selangor Raw Water Transfer Project, Shimizu-Nishimatsu-UEMB-IJM JV, ∅5.2m Main Beam TBMs in granite, limestone and faults

Mexico
- Fresnillo Mining Development, Industrias Peñoles, open square TBM of 5x4.5m in sandstones and shales

Peru in
- Yuncan Hydropower Project, Skanska-Cosapi-Chizaki JV, ∅4.1m Main Beam TBM in tuff, andesite and faults.
- Olmos Trans-Andean Project, Odebrecht Peru Ingenieria y Construccion, S.A.C., ∅5.3m Main Beam TBM in quartz porphyry, andesite, tuff, squeezing rock and faults

Philippines
- Casecnan Multipurpose Project, CMC Construction Co., ∅6.5m Gripper-TBM in granodiorite, andesite and faults

Spain
- Tunnel San Pedro, OHL s.a., ∅9.45m Gripper-TBM in different gneisses, dykes, faults
- Tunnel Pajares, Dragados, ∅8.9m Double-Shield TBM in quarzite, sandstone, slate, limestone, faults, overthrusting, karst

Sri Lanka
- Uma Oya Multipurpose Development Project, Farab Energy and Water Projects, ∅4.3m Double-Shield TBM in different gneisses, marble, fault & shear zones

Sweden
- Hallandsas Railway Tunnel, Banverket (Swedish Railways), ∅9.1m Gripper-TBM in varying rock quality, featuring alternate layers of hard, disintegrated and water-bearing rock

Switzerland
- Vereina Tunnel and Zugwald Tunnel, Rhaetia Railways (RhB), ∅7.6m Open TBM in gneisses, amphibolite, schist, faults and partly highly sheared, incompetent serpentine
- Adler Tunnel, Swiss Federal Railways (SBB), ∅12.5m Shield TBM in marl, dolomite, anhydrite, faults
- Piora Pilot Tunnel, Swiss Federal Railways (SBB), ∅5m Gripper TBM in gneisses and cataclastic zones
- Gotthard Base Tunnel, Swiss Federal Railways (SBB), ∅9.5m Gripper TBM in granite, gneisses, dolomite, kakirit zones (fault gouge) and cataclastic zones
- Access Gallery Limmern, JV Access Gallery Limmern, ∅8m Double-Gripper TBM in chalk, limestone and karst
- Safety Gallery Kerenzerberg, Federal Roads Office (FEDRO), ∅7.1m Double-Shield TBM in limestone and karst