

# TERRATEC TBMS DOUBLE BREAKTHROUGH IN INDIA



**T**ERRATEC is proud to announce the first two TBM breakthroughs in New Delhi, India. The breakthroughs are on the CC-07 and CC-24 Projects for Delhi Metro Phase-III. Sixteen additional breakthroughs by TERRATEC TBMs are scheduled to occur in the course of the next few months.

On July 31st, TERRATEC's S23 Tunnel Boring Machine working in Contract CC-07 completed excavation on the down line from the Jama Masjid Station

to the Lal Quila Station. The breakthrough ceremony was held in the presence of Contractor representatives from the joint venture between Metrostroy O.S. of Russia and ERA Infra Ltd. of India and Client DMRC. On August 2nd, the S25 tunnel boring machine working in Contract CC-24 accomplished another breakthrough from the Hazrat Nizamuddin Station to the Ashram Station. The TBM has advanced a total of 1,665m inconspicuously and without causing any disturbance to

the city's activities. The CC-24 Contractor is a joint venture between J.Kumar Infraprojects Ltd. of India and China Railway Third Group (CRTG) of China. The next drive for TBM S25 is scheduled to complete the line between the Vinoba Puri Station and the Ashram Station.

The TERRATECS23 and S25 EPBM TBMs are 6.61m in diameter and include state-of-the-art features such as the 900kw VFD electric driven CutterHead. They have a versatile design for either

excavating soft ground with cutting tools or mixed ground and rock using up to 33 number 17" roller disc cutters. Both TBMs have active type articulation and 2-component grout backfilling systems.

The geology encountered to date at Project CC-07 included large quantities of fresh, very hard (up to 200MPa) and very abrasive quartzite. In addition to sections with a full face of rock, there were sections with very variable mixed ground conditions and completed the drive successfully.

TERRATEC has eight Tunnel Boring Machines currently excavating metro tunnels for Delhi Metro Phase III. Work will continue through 2014 with completion in 2015.



Project CC-07: Picture from inside of the TBM CutterHead showing the very hard quartzite.



Project CC-07: Boulders of sizes over 600mm were found passing through the TBM Screw Conveyor

## TERRATEC DELIVERS TBM FOR ISTANBUL METRO

**T**ERRATEC is proud to announce a new Tunnel Boring Machine delivery for Istanbul Metro in Turkey on August 28th after the successful performance of the workshop testing.

The official ceremony was held on TERRATEC's facilities in the presence of representatives from the client, a joint venture amongst the parties of Gülermak, Kolin and Kalyon (GKKJV).

The customized Tunnel Boring Machine is a Ø6.56m EPB

Shield. The TBM has a versatile CutterHead designed to excavate Istanbul's mixed geology which includes rock formations and includes state-of-the-art features such as the VFD electric driven CutterHead, a versatile design of the cutting tools that are interchangeable with 17" roller disc cutters or the active type articulation for the shield. The tunnel segment lining will be made of RC segments, universal type, with an outer diameter of 6,300mm, inner diameter of 5,700mm and width of 1,400mm.

The TBM will be transported to Turkey and commence boring at site before end of the year.

"We are pleased that the TERRATEC TBM was ready as promised in record breaking time and look forward to great performance when it arrives on site" said the JV's Vice Project Manager, Emre ÇELİK.

The JV targets to build a leading-edge rapid transit line on top of the existing Istanbul Metro system between Mecidiyekoy and Mahmutbey in the east and west



respectively of the European side of the Eurasian megalopolis. The new line will be 17.5 km in length and consist of 15 stations, the journey time between both locations will take only 26 minutes. It is expected to be in service by 2017.

TERRATEC takes pride in expanding its sales coverage to Middle East and Europe. The Company currently has a Regional Office in Dubai covering the Region and expects more TBM sales to come in the next months.



## WHEREABOUTS

See you at these exhibitions!



Bologna , ITALY  
Oct. 23<sup>rd</sup> - 25<sup>th</sup>



Kolkata, INDIA  
Dec. 3<sup>rd</sup> - 6<sup>th</sup>



Delhi, INDIA  
Dec. 15<sup>th</sup>-18<sup>th</sup>

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