

TERRATEC TBMS COMPLETE THE TUNNELLING WORKS OF CC-34 PROJECT IN DELHI METRO AHEAD OF SCHEDULE



On 21st August 2015, the Tunnel Boring Machine S36 broke through at Palam Station, 27 days after its twin S37 did the same, completing the last drives on Contract CC-34 of Delhi Metro Phase-III. With this, the Contractor has bored a total of 3.6km by using TERRATEC TBMs.

The breakthrough ceremony was held in presence of

the Project Owner, Delhi Metro Railway Corporation, and the Contractor, a Joint Venture between Hindustan Construction Company Ltd. of India and Samsung Engineering & Construction Group of Korea. "We are thankful to all our sub-contractors and equipment suppliers, especially TERRATEC, as these TBMs have excavated very smoothly and this has helped to complete the works

ahead the planned schedule" Mr. Raman Kapil, JV's Project Director, mentioned during his opening speech.

The Contractor selected TERRATEC to design and manufacture two Ø6.52m EPB Tunnel Boring Machines with a traditional soil configuration, equipped with a Spoke-Type Cutter Head with a 57% opening ratio. The machines



were nicknamed "Jantar" and "Mantar" to remember the Indian gigantic instrument created in the 18th Century to measure the time of the day.

The boring of the first stretch started in August 2014 from Viaspuri Shaft and broke through near Kerala school, where a train cross-over has been planned for this Metro Line, completing a short drive of 219m. From there both TBMs were dragged 110m through the cross-over area to start boring a second drive of 354m to Janakpuri Station. On this drive, The TBMs passed beneath the existing Janakpuri elevated metro station. The distance between the tunnel wall and foundation piles of the

existing metro station was only 3m.

All the stretch between Viaspuri and Janakpuri stations went under moderate water pressure condition up to 2bar. The geology was composed of very wet silty clay & sandy soil typical of Delhi. Both TBMs passed underneath residential areas for what a very accurate settlement control was implanted, keeping the settlement within less than one centimeter on those critical zones.

The final stretch of the project for TERRATEC TBMs went from Dashrathpuri to Palam Station. The twin 1224m long drives passed through very

dry soil, for what the foam injection system on the TBM CutterHead was appropriately used for conditioning of the muck. The TBMs went beneath the Palam flyover where the distance between pillars and TBMs was less than 4m. On this last stretch, the Contractor kept steady weekly advances up to 120m per week, what allowed the tunnelling work to be completed for the original planned time.

TERRATEC has deployed a total of eight Tunnel Boring Machines which so far have excavated over 12km of metro tunnels for different Contracts on Delhi Metro Phase III. All tunneling works will be completed by beginning of 2016.

TERRATEC TBM ACHIEVES NEW BREAKTHROUGH IN DELHI

TERRATEC is pleased to announce a new TBM breakthrough in Delhi, India. The recent breakthrough is on the Delhi Metro Phase-III CC-07 Project, completing the tunnelling on the up line tunnel between Kashmere Gate & Lal Quila Stations.

On August 3rd, TERRATEC's S23 Tunnel Boring Machine working in Contract CC-07 completed excavation on the upline from the Kashmere Gate Station to the Lal Quila Station. This is part of the extension of the Central Secretariat corridor to Kashmere Gate via ITO. 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.

"This TBM was lowered at Kashmere Gate shaft on December 6th, 2014 and after assembly of the TBM below the ground the initial drive began on December 26th, 2014. The maximum depth of the tunnel is 16m below the earth's surface." said a DMRC spokesperson.

The TERRATEC Tunnel Boring Machine is a Ø6.61m Earth Pressure Balance Shield. It has been specifically designed for the conditions of this project and integrates leading edge features such as the 900kw VFD electric driven CutterHead, a versatile

design of the cutting tools that are interchangeable with using up to 33 number 17" roller disc cutters, the active type articulation for the shield, and the tail's built-in 2-Liquid backfilling system.

The JV uses a total of two (2) TERRATEC TBMs for the execution of the tunnelling works between Jama Masjid and Kashmere Gate Stations. The Tunnel Boring Machine emerged at Lal Quila Station site after making a 1,351m long tunnel from Kashmere Gate Station. A total of 967 rings have been inserted concurrently along with the tunneling process. Another TBM is working on a 1,356m long tunnel on the down line.



The tunnel passes beneath the existing Kashmere Gate elevated Metro Station. The Stations at Kashmere Gate and Lal Quila are also being constructed by the same contractor, Metrostroy Era JV using the Cut & Cover method. The distance between the tunnel wall and foundation piles of the existing metro station is 1.2m. An extensive instrumentation and monitoring regime was put into place by the joint venture as precautions used to monitor and control the tunnel excavation.

Under the Delhi Metro Phase-III plan, the Violet Line is being extended from its current terminus to meet the Yellow and Red Lines at Kashmere Gate Station. This will offer an alternative route between Central Secretariat and Kashmere Gate Stations, easing crowds on the heavily-used Yellow Line.

TERRATEC has deployed a total of eight Tunnel Boring Machines which so far have excavated 12 km metro tunnels for Delhi Metro Phase III. All tunneling works will be completed by beginning of 2016.

Watch video:
<http://www.terratec.co/video/02.html>

WATCH US ON

Here is a video with TERRATEC TBM S23 Breakthrough (Delhi Metro) Watch now!



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Oct. 8th-9th



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Geotechnical
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Dubai, UAE
Nov. 23rd-25th



Bengaluru, INDIA
Nov. 25th-29th

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