

Underground rocks could slow down metro phase-2

Soil Tests Reveal Rock Formations

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Chennai: Construction of the ambitious phase-2 metro corridor, which will link several suburban areas to the heart of the city, could pose an engineering challenge as rocks may slow down work. Soil tests conducted in multiple locations so far revealed hard rock formations along the planned alignment.

While many locations in North Chennai have rocky strata at a depth of 20 metres, those along the OMR in the south have rocks at shallow depths of 10 metres. Soil tests have been completed in 2,200 locations and the rest will be finished by March 2020. Construction for the phase is expected to begin by early 2020.

Engineers have found mostly hard black rock formations in several locations along the 52km priority corridor where soil tests were completed in 1,960 spots recently. While places from Madhavaram to Perumbur had mostly clayey soil, those between Perumbur and Sholinganallur, including places between Taramani and Sholinganallur, had rocky strata at a depth of 20m.

"There's rock almost every-

where and are at varying depths as close as within a 50m stretch," a metro rail official said. "If it's only rock or clayey soil, construction would not be a problem as we will use tunnel boring cutters for excavation accordingly. It is the mixed strata with loose soil on top and rock in the formation that worries us," said a metro rail official. Officials said the 52km corridor has mostly charnockite and granite black rock, while at certain locations, it's a mix of quartz. Construction for the 52km will be taken up first next year.

Unlike phase-1 where soil

METRO FACES OBSTACLE COURSE

Construction of the 118.9km phase-2 may pose a challenge as soil tests reveal hard rock formations over stretches of the alignment

Metro phase II



TYPE OF STRATA

Perambur-Madhavaram - Bentonite clay till 25m

Perambur-Sholinganallur - 10m - loose soil; from 15m to 20m - charnockite rock

52km priority corridor

Madhavaram to Sholinganallur (35km) and Madhavaram to CMBT - 1,960 locations completed

Sholinganallur to SIPCOT (10.8km) -

SOIL TESTS



soil tests underway at 250 locations - to be completed by September

Lighthouse to Meenakshi College (8km) - 320 locations - 50% completed; rest by September

Meenakshi College to Porur

15km - tenders awarded; 500 locations to be tested

CMBT to

Medavakkam Koot Road 25km - tender awarded; 900 locations to be tested

tests were conducted for every 50 to 100m, in phase-2 investigations were done for every 25m. "We have also giving the option for the construction contractors to do their own soil investigation, as they can plan their work and machinery accordingly," a top CMRL official said.

In phase-1, tunnels were built at a depth of 18 to 30m. Rock formations were one of the reasons cited for the stalling of construction along Anna Salai. A Russian contractor building the underground network abandoned work, as they were not equipped to cut through soil and build tunnels.

They later blamed it on the poor soil tests that didn't reveal rocks under the arterial road.

Some stations on Anna Salai like Teynampet and Thousand Lights were built at greater depths than the others to avoid the rocky soil. Similarly, it took more than six months to excavate soil on a 500m stretch between the government hospital and central railway station due to mixed strata of loose soil on top and rock below. "When there is mixed strata, we cannot excavate at the usual speed of 9m to 11m a day, as it may affect the buildings on the surface," an official said.