

Printed from

THE TIMES OF INDIA

One km cement rd in 15 days, VNIT scholar shows the way

TNN | Jul 24, 2018, 03.25 AM IST

Nagpur: A Visvesvaraya National Institute of Technology (VNIT) scholar and his guide from the department of applied mechanics have developed a new technique to help cut the duration of constructing a km-long cement concrete road to 15 days from three months, its thickness and the need to frequently dig them up to lay lines or repairs.

PhD scholar Ameen Syed (28) and his guide — associate professor RS Sonparote — say advantages of ‘pre-stress precast concrete road’ are very relevant in the context of Nagpur’s ongoing development. The duo successfully conducted the trial of the method by laying a 25-metre stretch on the VNIT campus this year in February and is being under observation since then.

“Laying of concrete panels to form the carriage way was completed in just two days on the 25-metre stretch in front of the new academic section on the campus,” says Ameen.

The panels were cast in an open space on the campus and later transported to the site. The interlocking panels were fixed using a rod which can be removed to as and when needed. “The interlocking design ensures there is no need to dig the road but just lift the panel for any underground work,” he says.

Similarly, Ameen says, the innovation can solve traffic issues seen across the city during the construction of cement roads beside speeding up the works. “The panels can be prepared and stored at a casting yard and brought to the site for installation during night hours or when the traffic flow is less,” he said.

The project had cost the duo Rs2lakh which included hiring a crane, red mix concrete and preparing the bed for prestressing

panels. Prestressing is a process which helps in reducing the thickness of the road and saves materials, the PhD scholar explained. He said if the thickness is less, ultimately waterlogging in localities will be prevented.

“We are ready to transfer the technology for government and private agencies. Due to lack of advanced machinery, we couldn’t achieve perfection, but the durability of road inside the campus is excellent,” Sonparote said.

Ameen, who did his BE in civil engineering from Ramdeobaba College and PG in structural engineering from BITS Pilani, said the project was started in 2015 as main part of his PhD thesis titled ‘Prestressed Precast Concrete Pavement/Road’.

In the next part of the study, the scholar and his guide would test the performance of the road by plying heavy vehicles on it and computer analysis for project execution.

Another highlight of the method is strengthening of the panels through proper curing. “The water evaporates on the site and the structure gets weak,” he said highlighting the lacuna in the present method.