

Now, build a toilet in 4 hours with city lab's tech

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Chennai: With the help of a new cost-effective technology developed by a CSIR laboratory, a structure like a toilet can be built within a few hours. The city-based CSIR-Structural Engineering Research Centre has developed textile reinforced concrete panels for the construction of affordable, lightweight, non-corrosive and durable structures. On Saturday, the national research laboratory signed an MoU with Smart Built Prefab Pvt Ltd, Hyderabad, to transfer the technology during the celebration of its 53rd Foundation Day.

Senior scientist Smitha Gopinath said the lab has developed panels using textile reinforced concrete prototyping technology (TRCPT) that does not require moulds during casting. SERC had filed for a patent for TRCPT technology in 2014.

Materials like glass, carbon, aramid, polypropylene (plastic), jute and coir can be used as a textile mesh for reinforcement replacing conventional iron and steel rods. "Usage of textile mesh as a construction material is relatively new though it is widely used in other countries. A glass textile mesh, in particular, is alkali resistant, so it won't corrode," she said.

The panels can be made in a matter of 30 minutes while a structure like a toilet unit can be assembled with these panels in less than four hours with just two workers. It does not require any special equipment such as cranes. "Any unskilled worker can construct the structures but it requires proper supervision," Gopinath said.

At IIT Madras, a team from the civil engineering department had built a building out of glass fibre reinforced gypsum panels in less than a month. Since material like glass is flexible, the panels can be custom made to any shape or size to build walls, roofs, doors and bases of a structure.

SERC scientists say the technology will cost less than conventional construction methods. "For the first time in India, a company

in Gujarat has started production of glass textiles. This will reduce the cost of the material. If the panels are mass produced, it will further cut down on the cost," they said.

Managing director of Smart Built Prefab Simhadri Raju said they have so far built 1000 toilets in Vizianagaram district in Andhra Pradesh with conventional precast concrete panels that use steel, as part of the Swachh Bharat Mission. "What SERC has given us is the latest technology, which is more durable," he said.