

TEXTILE REINFORCED CONCRETE TOILET

A novel solution to construct rapid-built, affordable, light-weight and durable toilets

CSIR-Structural Engineering Research Centre (CSIR-SERC) has developed a prototype to construct easy-to-assemble toilets using textile reinforced concrete (TRC) panels. TRC is an innovative building material - comprising of fine-grained high quality cementitious matrix and nonmetallic alkali-resistant textile, and has already established its mark in the global level as an alternate construction material. The toilets are built using precast TRC panels, manufactured using textile reinforced concrete prototyping technology developed at CSIR-SERC.

FEATURES / HIGHLIGHTS

- Toilets built using precast TRC panels
- TRC panels used as wall, roof, door and base of the toilet
- TRC panels are light-weight, non-corrosive and durable
- Economically cheaper than conventional toilets
- Speedy installation – a toilet can be assembled in 3-4 hours by 2 persons using simple tools
- Life span of the toilet is around 25-30 years



TECHNICAL DETAILS

- Total weight of the toilet is less than 500kg
- TRC panels vary in thickness from 15mm to 25mm
- Formwork not required for TRC panel casting
- TRC panels can be custom-made to any shape and size without using moulds
- TRC panels can withstand rough weather conditions
- No major plant or machinery required - TRC panels can be produced at site or in factory in mass scale using mortar mixer machine
- Unskilled manpower can be deployed for production of TRC panels
- TRC panels can be aesthetically designed without any additional cost during fabrication



Construction of TRC toilet - various stages

APPLICATIONS

- Contribution to achieve the Swachh Bharat mission of the Government of India to construct large number of toilets within the next couple of years
- Holds great potential to solve the problems related to lack of toilets in the interior regions of India
- Contribution to infrastructure development in rural and urban areas

TECHNOLOGY TRANSFER


- The technology for manufacturing TRC panels for the construction of toilets has been transferred to M/s. Smart Built Prefab Pvt. Ltd., Hyderabad on non-exclusive basis
- The technology is available for transfer to other interested players in the industry




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