

Project Title: Precast Textile Reinforced Concrete U- Drains for Storm Water infrastructure (TRC U-drain)

Duration: 2 Years (Completed Project)

Objectives:

- Development and standardization of TRC U-drain
- Development of production method for TRC U-Drain
- Technical specifications for TRC U-drains
- Demonstration of TRC U-drain field implementation

Deliverables: Development of Precast Textile Reinforced Concrete U- Drains

Significant Achievements:

Key achievements have been the development and demonstration of TRC U-drains as a durable, lightweight, and cost-effective alternative to conventional precast RCC drains, addressing the urgent need for resilient storm water infrastructure in flood-prone urban areas. By integrating innovative thin-section textile reinforced concrete (TRC), the newly designed U-drains overcome corrosion issues, reduce weight for easier transport and installation, and provide competitive performance for pedestrian, LMV, and HMV applications. The project not only showcased the technical feasibility of TRC U-drains but also highlighted their potential for large-scale adoption by policymakers and town planners, offering a sustainable solution for modernizing India's aging storm water networks. This achievement directly contributes to climate-resilient infrastructure, enabling flood-free cities of the future while opening new business opportunities for industries engaged in urban development. Two types of TRC U-drains have been developed. Type-I uses glass textiles as reinforcement, and Type-II incorporates waste fishing net into TRC U-drain. Both types of TRC U-drains are first of its kind in nature in National and International context.

Potential applications: Storm water drainage projects for cities, small towns, and villages, as well as real estate, industrial, infrastructure, and institutional projects can make use of the proposed TRC U-drains.

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TRC U-drain



Prototype testing of TRC U-drain & Team