

## SMC TOLLWAY PRECAST CRASH BARRIERS

### BARAS, RIZAL, REGION IV, PHILIPPINES

#### Precast Concrete

##### Problem

Precast concrete is essential in construction due to its efficiency, durability, and strength. However, traditional methods of using precast concrete come with several challenges. Transporting these precast elements from the plant to the site can be problematic, leading to inconsistencies, particularly when faced with rough road conditions and bad weather. These precast elements are also vulnerable to damage during the demolding process, which can compromise their quality before they are even installed. Moreover, the installation of traditional reinforcement bars requires significant labour and time, making the process labour-intensive and potentially delaying project timelines, while also increasing overall costs.

##### Solution

To overcome these issues and stay on schedule, Maccaferri introduced a cutting-edge solution utilizing Dramix steel fiber reinforcements. By mixing twenty kilograms of Dramix 4D 65/60BG steel fibers into the concrete, we were able to replace the need for approximately 500 kilograms of conventional deformed bars. This innovative solution reduced the overall construction time by 50%, allowing for faster project completion. Additionally, the steel fibers provide three-dimensional reinforcement, significantly improving the quality and durability of the final product. This enhancement prevents damage and spalling, ensuring a more reliable and robust structure. By addressing the logistical, structural, and labour-related challenges, this solution contributes to more efficient and cost-effective construction projects.

**Client:** Filfirst Concrete Innovations, Inc.

**Designer / Consultant:** FilFirst Concrete Innovations /SMC Infra

**Contractor:** FilFirst Concrete Innovations, Inc.

##### Products used (Qty.)

- Tunnelling Reinforcement	8000kg, Dramix 4D
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**Date of construction:** 01/2024 - 04/2024

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During Installation



During Installation



During Installation



During Installation



Completion