



## DMRC Bridge Delhi (India)

**CUSTOMER**  
DMRC

**SECTOR**  
Bridges

**DATE**  
2019-2020

### PRODUCTS

- Nitowrap 30
- Nitowrap 410
- Nitowrap CWS450 (Formerly called Nitowrap EPCF 450)
- Renderoc HS XTRA
- Nitocote UR512

### THE PROJECT

On the early morning of June 21, 2019, a massive fire broke out in a furniture market in Shaheen Bagh near Kalindi Kunj Metro Station in Delhi. The Magenta Line of the Delhi Metro was widely affected due to the fire during peak hours. Passengers were forced to change routes, causing great inconvenience. The severe heat generated by the fire led to delamination of the concrete on the precast segments, exposing the reinforcement and resulting in loss of strength and compromised stability of the metro span.

### THE SOLUTION

As pioneers in structural strengthening systems, Fosroc was consulted and, after due consideration of the client's requirements, Fosroc proposed the Carbon Fiber Fabric (i.e., Nitowrap CWS 450 (450 GSM)) system to restore the capacity of the fire-affected precast segments. For all spalled portions of concrete, Renderoc HS XTRA Class A1 Fire Rating repair mortar was used for rehabilitation. Nitocote UR 512 UV protective coating was also proposed to protect FRP systems.

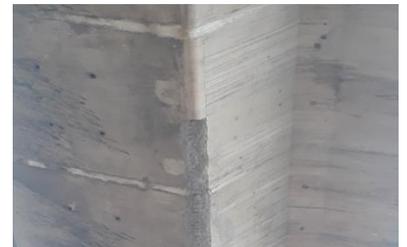
### THE BENEFITS

Renderoc HS XTRA: High strength, fiber-reinforced polymer modified repair mortar.

- High compressive strength
- Fiber-reinforced
- Very low permeability – Prevents entry of chlorides, etc.
- Class A1 Fire Rated as per EN1504

Nitowrap CWS: A high-quality carbon fiber fabric used with epoxy saturating resin Nitowrap 410.

- High tensile strength and modulus
- Lightweight system reduces requirements for heavy supporting equipment and adds negligible additional load
- Rapid installation provides cost savings, rapid return to service and minimal disruption to surrounding works



Spalling of concrete due to fire



FRP Wrapping



After Repair