

SafeBase™ Carbon Fiber Reinforcement Calvary Church, Minneapolis MN



June 2023

SafeBasements of Minnesota was sent a request from Frana Companies for strengthening the concrete beam moment capacities of three existing beams inside Calvary Church using carbon fiber reinforcement. The Church was being remodeled and the beams needed to be brought up to code. Each beam was 28'3" long, 18" wide and 28" deep. SafeBasements completed the required calculations for the design and created plans for the carbon fiber reinforced polymer underlayment of the beams. The plans used two layers of 24" Bidirectional mesh installed on the bottoms of the beams and wrapped about 3" up the sides.





Left: Surface Prep Above: Epoxy Application

The installation process first involved prepping the beam surfaces by grinding the concrete to expose the aggregate, cleaning/vacuuming the surface, and performing some minor patching.

Once the surface was prepped, the carbon fiber reinforcement was installed by saturating the beam surface with epoxy, saturating the strap with epoxy, then adhering the strap to the surface. All the work was performed overhead on scaffolding. The project was completed in June 2023.



SafeBasements of MN
60335 US Highway 12
Litchfield, MN 55355
320-593-8729
www.safebasements.com



SafeBasements, Inc.
28272 Minnie Street
Paynesville, MN 56362
1-888-963-6892
www.safebasementsinc.com