

# 2018 FTBA Construction Conference

February 8 & 9, 2018

Orlando, FL



# GFRP Rebar Case Study Installer's Perspective

**Daniel J. Dymarkowski**

General Manager

Foundation Steel Rebar Division

## Structures Session 2: 3:30 PM-5:00 PM, Thursday 2/8/2018

### 1. GFRP Rebar Cage Fabrication Case Study (15 min)

- Daniel J. Dymarkowski, Foundation Steel Rebar Division.

### 2. Bakers Hallover Cut Bulkhead Rehabilitation (15 min)

- Jake Perez, Bolton, Perez & Assoc. [JPerez@BPAMiami.com](mailto:JPerez@BPAMiami.com)

### 3. Skyway Rest Area Rehabilitation (15 min)

- Andra Diggs, FDOT D1, [Andra.Diggs@dot.state.fl.us](mailto:Andra.Diggs@dot.state.fl.us)

### 4. Halls River Bridge Replacement Update (15 min)

- Antonio Nanni for Thomas Cadenazzi, University of Miami, [txc470@miami.edu](mailto:txc470@miami.edu)
- Steve Nolan, FDOT SDO, [steven.Nolan@dot.state.fl.us](mailto:steven.Nolan@dot.state.fl.us)

### 5. CFCC Recent Projects and PT developments (15 min)

- Yoshiaki Yamamoto, TokyoRope USA, [yamamoto.yoshiaki@tokyorope.jp](mailto:yamamoto.yoshiaki@tokyorope.jp)

### 6. Guide Specifications for GFRP Reinforcing (15 min)

- Antonio Nanni, University of Miami [nanni@miami.edu](mailto:nanni@miami.edu)
- Brahim Benmokrane, University of Sherbrooke, [Brahim.Benmokrane@USherbrooke.ca](mailto:Brahim.Benmokrane@USherbrooke.ca)

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# Personal Introduction



- General Manager of Foundation Steel's Rebar Division
- Previously worked in the field as an Ironworker
- Afghan War Vet
- Married with two small children



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# About Foundation Steel LLC



- Located in Toledo, Ohio
- Covers Ohio and Michigan
- Family owned since Day One
- Full service rebar & structural division
- 150 employees



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# Our Steel Rebar Experience



- \$15MM in ODOT's jobs
- 176 projects in 2017
- Bridges, parking garages, and buildings.
- 16,000+ tons of rebar installed
- 500,000 LBS post tensioning



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# Our GFRP Rebar Experience: Abutment Mock Up



- 9 man hours (GFRP) vs. 24 (Steel)
- Ease of Construction



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# Our GFRP Rebar Experience: Caisson in Columbus, OH



- SIGNIFICANT labor savings
- GFRP actual hours 24 vs. 48 in steel
- \$248 per ton of SAVINGS

Significant Cost Savings to the Customer



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# Schedule & Labor Force



- Half the man hours means half the time to perform.
- Same number of jobs, less reliance on a large labor force.
- Better quality from my core group



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# Decreased Weight = Increased Speed



- An ironworker picks up as much as his arms can hold, not how much weight he can handle
- The surface of the bar holds better than steel when tied
- Reduced fatigue in the second half of the day

Significant Production Gains

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# Safety Is An Everyday Priority



- Reduced lost time due to ironworker fatigue
- Reduced heat injuries
- Reduced back strains

Improved Quality of Life for Workers



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# Conclusion

- I want to be a part of using the best product possible, that is why I'm here.
- Will GFRP replace all rebar? Simply put, no.
- Are there applications where it makes a massive amount of sense to use GFRP?

**YES**, from both an end user's standpoint and an installers standpoint.

- I want to be a part of improving infrastructure and quality of life across the United States, I believe Florida will lead that charge in this respect. I am happy to be a small part of it.



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