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ELONGATE MEMBER REINFORCEMENT WITH A STUDDED COLLAR

MECAHNICAL, CIVIL, & ENVIRONMENT

Device that uses fiber reinforced polymers to support columns, pipes, and walls by enabling load transfers between existing structures and support layers.

TECHNOLOGY TYPE

Infrastructure
Fiber Reinforced Polymer

STAGE OF DEVELOPMENT

Proof of concept
demonstrated through
experimental testing.

IP PROTECTION

U.S. Utility Patent Issued

Elongate Member
Reinforcement
US9976315B2

Continuation-in-Part Issued in the United States

Elongate Member
Reinforcement with a
Studded Collar
US10227786B2

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Reference Number: U-5613

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TECHNOLOGY SUMMARY

In 2017, the American Society of Civil Engineers gave America's infrastructure a D+, based on the country's crumbling infrastructure. Fiber reinforced polymer (FRP) composites, which are lightweight, corrosion resistant, and have a high strength to weight ratio, show promise for strengthening and rehabilitating structures, but can be cost prohibitive.

The proposed device utilizes FRP to strengthen or reinforce columns, pipes, and walls at a lower cost. The device secures a support layer to a structure with a collar to facilitate load transfer between the structure and support layer, enhancing the overall strength and durability of the structure.

FEATURES AND BENEFITS

- Facilitates load transfer between a structure and a support layer to enhance structure strength.
- Integrates easily with existing structures.
- Reduces the cost of structure strengthening and rehabilitation.
- Improves strength and performance of strictures in case of natural disaster.

RECENT PUBLICATIONS

Ameli, M.J., Brown, D.N., Parks, J.E., and Pantelides, C.P. (2016). Seismic column-to-footing connections using grouted splice sleeves. *ACI Structural Journal*. 113(5):1021-1030. doi:
[10.14359/51688755](https://doi.org/10.14359/51688755)

INVENTOR PROFILE

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