



TECHNOLOGY

Highly Energy-Dissipative Ductile (HED) Diagrid Framing System

OVERVIEW

High rise buildings in high seismic zones are susceptible to destructive high energy forces during major and even smaller earthquakes. Constructing buildings using a system that has both inelastic qualities for strength and elastic qualities to provide a measure of flexibility during seismic activity would undoubtedly be beneficial.

Researchers at the University of Maryland have developed a diagrid system of highly energy dissipative (HED) ductile (able to undergo change of form without breaking) shear links coupling the various diagonal members and beams accommodating the architectural flexibility while providing an efficient lateral force resisting structural system. The diagrid framing, which is an accepted aesthetically elegant design technique, when utilizing the HED links, provides a promising seismic-force resistant structural system. Furthermore, the links alleviate the complexity in designing and constructing the connection which is one of the challenges of the diagrid design. Lastly, under severe earthquake loading, the damage can be confined to the links which are easy to replace or repair, making its relatively low cost another design advantage.

Applications:

- Design and construction of high rise buildings in high seismic zones

Advantages:

- Provides a seismic-force resistant structural system which is aesthetically elegant
- Alleviates the complexity in designing and constructing the diagrid system
- Under severe earthquake loading, the damage can be confined to the links which are easy to replace and/or repair

CONTACT INFO

UM Ventures
0134 Lee Building
7809 Regents Drive
College Park, MD 20742
Email: umdtechtransfer@umd.edu
Phone: (301) 405-3947 | Fax: (301) 314-9502

Additional Information

INSTITUTION

University of Maryland, College Park

PATENT STATUS

Patent(s) pending

LICENSE STATUS

Contact OTC for licensing information

CATEGORIES

- Engineering
- Industrial Processing

EXTERNAL RESOURCES

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