COMPOSITE DESIGNS GROUP

Services and Products

FRP material systems

Repair:

Concrete strengthening

Sheet systems (Our systems utilize glass, aramid, and carbon fiber sheet systems with epoxy resin for in-field application of strengthening solutions for columns, beams, slabs, and walls. CDG provides multiple system types according to the unique requirements of each design, each environment, and each construction sequence.)

Laminate systems (Our precured systems utilize high modulus carbon laminates bonded to concrete slabs for increased flexural strength. This method provides for simple field installation and insures high level of factory insured quality control and assurance.)

Stressed systems

Slabs – deflection control (Post tensioning high modulus laminates is the only way to provide deflection control and stiffness to retrofitted structures. Passive, wet applied FRP systems provide very little resistance to deflection as they are in a passive state until loaded. Post tensioning the carbon laminates provides increased stiffness immediately)

Columns – active jackets for seismic, axial enhancement (Increasing seismic performance and axial load capacity of columns in provided by FRP jackets through a clamping force and confinement. Such performance requires an active jacket to provide capacity without vertical and lateral deflection. Passive jackets do not provide the necessary clamping force to enhance axial capacity nor resist lap splice degradation until the column is subjected to high levels of dilation and vertical deflection.)

Moisture accommodating systems (The method of encasing concrete with resin systems that do not allow the concrete to breath has been a topic of debate for years. Research shows that sealed concrete can be prone to internal deterioration. In addition, epoxy based resins must be completely protected from moisture during the application and cure. Our moisture cure epoxy system incorporates proprietary additives to allow the cured resin to breath and to be used in wet environments. This system allows application of the materials in almost any environment and eliminates any potential concrete deterioration due to preventing vapor transmission.)

Masonry strengthening

Sheet systems

Grid systems

Spray Applied

Wood structure strengthening

Cut in laminates

Rehabilitation and upgrade

Pile jackets

Marine Structures

Pre-cured jacket encasements

Water curing systems

New Construction

FRP rebar systems

Stay-In-Place Structural Formwork

Structural deck systems

Prestressing tendons

- **Reinforced Wood Structures**

- **Highway Construction**
  - **Asphalt reinforcements**
  - **Reusable formwork**
  - **Stay-In-Place Formwork**

- **Blast Mitigation**
  - **Energy Dissipating Systems**
  - **Collapse prevention materials**

Engineering Analysis and Design
- **Structural Analysis**
- **Finite Element Analysis and Design**

Research and Development of New Products
- **Manufacturing methods**
  - **Wet layup**
  - **Filament winding**
  - **Pultrusion**
  - **Resin Infusion**
  - **Bladder forming**
- **Testing**
- **FEA Analysis**
- **Industry Collaboration**
  - **Material vendors**

Manufacturing partners

Composite Application Training and Quality Control Testing
- **Training and certification of construction personnel**
- **Certified On-site supervision for multiple systems**
- **Quality Assurance Testing of Field Installations**
- **Quality Control Testing of field samples**

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