

Product Evaluation

PRODUCT INFORMATION

Product Name: RenewWrap FRP Strengthening Systems Website: www.geotreesolutions.com	Manufacturer: GeoTree Solutions, Lafayette, Colorado Supplier: GeoTree Solutions, Lafayette, Colorado
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RE: Review of RenewWrap FRP Strengthening Systems

VENDOR CLAIMS AND INFORMATION

CLAIMS

RenewWrap FRP Strengthening Systems are Lightweight, flexible, high-strength fabric that can be wrapped around and externally bonded to structural elements. They are easy to impregnate using wet or dry lay-up methods.

DESCRIPTION

The RenewWrap reinforcing fabrics (CF335, CF600, CF1400, GF875) are made with either glass or high strength, standard modulus carbon fibers. The RenewWrap FRP fabrics are combined with RenewWrap LPL resin to be a structural repair for bridges, columns, slabs, pipes, and pier caps.

POTENTIAL USAGE

RenewWrap FRP Strengthening System is used to strength or retrofit existing concrete and masonry structures. It is recommended for strengthening for load increase, address changes in a structural system, retrofit for seismic, wind, or blast. As well as restoring strength to damages members like fire or vehicle impact, and deteriorated members subject to corrosion.

STANDARDS

ICC Evaluation: ESR-3663

ACI 440.2R - Guide for the Design and Construction of Externally Bonded FRP Systems for Strengthening Concrete Structures

ASTM D3039 - Standard Test Method for Tensile Properties of Polymer Matrix Composite Materials

ASTM D7565 - Standard Test Method for Determining Tensile Properties of Fiber Reinforced Polymer Matrix Composites Used for Strengthening of Civil Structures

ALBERTA TRANSPORTATION COMMENTS

EXPERIENCE

Transportation and Economic Corridors has no experience with this product.

APPLICABLE STANDARDS

Currently the Department does not have formal guidelines or specifications pertaining to the use of Fiber Reinforced Polymer (FRP) wrap systems, however the Department has developed informal requirements when these systems are used on a project specific basis. Canadian Highway Bridge Design Code (CSA S6) also contains design requirements for externally bonded FRP strengthening systems.

RECOMMENDATIONS

RenewWrap FRP Strengthening Systems be listed as a Potential Product under Transportation and Economic Corridors Products List, Bridge Fiber Reinforced Polymer Wrap Systems – Proprietary, based on the information provided. Final acceptance as a proven product will be based on field performance.

NOTES/CAVEATS

- The Director of TSB’s Bridge Engineering Section must be contacted to approve the use of an externally bonded FRP strengthening system on a project basis.
- The FRP system and its impacts on the bridge structure shall be designed and evaluated by the Consultant’s Engineer on Record (EOR). The design shall be in accordance with CSA S6 and any additional requirements provided by TSB.
- The EOR shall consult with other FRP engineering professionals and manufacturers as required to support design development and ensure that the information shown in the Contract documents promotes competitive and viable bidding.
- The design notes and contractual documents are considered a Professional Work Product and shall be submitted to TSB for opportunity to review.
- FRP system installation shall only be permitted by manufacturer approved/licensed applicators . All installations must follow the manufacturer’s quality assurance protocols, including environmental controls, material handling, and curing procedures.

TRIAL PROJECTS

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