

Product Evaluation

RE: Review of SikaWrap Structural Strengthening System

PRODUCT

The SikaWrap Structural Strengthening System is manufactured by Sika Canada Inc, Quebec and is distributed in Alberta by Sika Canada Inc. located in Edmonton, Alberta.

VENDOR CLAIMS AND INFORMATION

CLAIMS

SikaWrap carbon and glass fiber fabrics are high strength materials that are bonded to structures for strengthening purposes. Sharing the attributes of composite strengthening, SikaWrap also offers the additional benefits of being able to conform to almost any complex or geometric shape. Web link for this product: www.sika.ca

DESCRIPTION

The SikaWrap® composite system is a high-performance strengthening system containing FRP fabrics and impregnation resins. They are applied on the strengthening site and formed into a fibre composite. The System is a carbon and glass fiber fabrics system used for external structural strengthening of concrete structures. The SikaWrap system has seven different fabrics which are SikaWrap Hex 100G, SikaWrap Hex 103C, SikaWrap Hex 106G, SikaWrap Hex 230C, SikaWrap Hex 103C-2X, SikaWrap Hex 103C-HM, and SikaWrap 600C.

POTENTIAL USAGE

SikaWrap Structural Strengthening System is used for post-reinforcing of general building construction, industrial buildings, parking structures, bridges and other structures constructed of concrete, wood and steel.

STANDARDS

ASTM D3039: Tensile Strength

ALBERTA TRANSPORTATION COMMENTS

EXPERIENCE

Alberta Transportation has some experience with FRP wrap system.

APPLICATION STANDARDS

Currently Alberta Transportation does not have guidelines or specifications pertaining to the use of Fiber Reinforced Polymer wrap systems.

Caveat: All FRP wrap system must be properly designed by a Professional Engineer (registration with APEGA) and all FRP wrap system must be applied by a licensed applicator.

RECOMMENDATIONS

SikaWrap Structural Strengthening System be listed as a Potential Product under Alberta Transportation 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

Rishi Adhikari
cc New Products Evaluation Group – Kristen Tappenden
Junaid Iqbal/Tyler Donovan