

RE: Galvanized Strand Buy American Waiver Request
Financial Projects Number: 251688-1-52-01 (F.A.P. 3951-501-I)
SR-836/I-395 from West of I-95 to MacArthur Causeway Bridge

This email is to request a waiver of the Buy American requirements of CFR 635.410 for the Signature Bridge stay cable components on the above-subject project.

Overview: The stay cable components of the Signature Bridge on the above-subject project will be as follows:

- Utilize individually sheathed galvanized strands consisting of HDPE or HDPP sheath filled with flexible filler corrosion inhibitor meeting the requirements of FDOT Specification 938 sometimes referred to as a mono-strand system. The galvanized stands will be required to meet the PTI "Recommendations for Stay Cable design, Testing, and Installation" Appendix B, including fatigue and other tests.
- The stay cable system consisted of a group of mono-strands housed in HDPE stay cable pipe. The HDPE pipe will also require meeting the requirements of PTI "Recommendations for Stay Cable Design, Testing and Installation", Section 3.5.

This system meets the two barriers of corrosion protection required by PTI, but includes galvanized strands which provides a prudent additional corrosion layer of protection especially given that the project site is located in Miami, Florida one block west of Biscayne Bay (extremely corrosive environment). Enhanced corrosion protection of the stay cables is required to meet the 100 years design service life of the bridge.

This specific cable stay protection system has been utilized on multiple bridges in both Europe and Asia, but to our knowledge has not been utilized here in the U.S.. **We know of no domestic producer of galvanized strands in the U.S. that can meet the fatigue testing of PTI (Appendix B).**

Project Information:

Financial Projects Number: 251688-1-52-01 (F.A.P. 3951-501-I)

Project Description: SR-836/I-395 from West of I-95 to MacArthur Causeway Bridge

Total cost of project: approximately \$556 million

Cost of waiver item: Since this is a design-build project currently in procurement, the total length of stay cable impacted by this Waiver will not be known until Award of the Project which is not due to occur until the Spring of 2017. Rough estimated cost of Waver Item is \$5 million.

Country of origin of the product (if known at the time): Europe and Asia

Reasons for the waiver request: The standard in the U.S. consists of following the PTI "Recommendations for Stay Cable Design, Testing and Installation" which calls for two barriers of protection. This typically consists of the system being proposed in this waive except with ungalvanized black strand. The concern of the standard U.S. produced stay system is that chaffing due to wind vibrations and loading may occur at certain zones along the cable over time thus compromising the sheathing resulting in loss of one layer of protection. In this case the bare ungalvanized strands are at risk of corrosion. Also this bridge is located in an extremely aggressive environment. That is the reason that galvanized strands are being proposed as a prudent additional layer of protection against corrosion.

A description of the efforts made by the State to locate a domestically manufactured product:

We contacted the following stay cable producers and they have confirmed that they do not produce galvanized strands in the U.S. and meeting the fatigue testing of PTI (Appendix B).

- Bekaert's USA
- Sumiden Wire
- Insteel Industries, Inc.

An analysis of re-design of the project using alternate or approved equal domestic product:

Several alternative stay-cable protection systems have been investigated. Filling the PE cable pipe with wax or grout has technical issues associated with thermal expansion differences between the HDPE stay cable pipe and the strands as well as long-term maintenance concerns associated with the wax leaking-out over time. Stainless Steel strands were considered but ruled out due to reduction in strength, potential fatigue issue and overall cost.