

**Request for Research Funding for FY 2022-2023**

**SPR Subpart B Project: SMO-23-02**

<b>Requesting Office</b>	SMO	<b>Priority</b>	2 of 10
<b>Proposed Title</b>	Review of Methods for Sealing Vertical Cracks on Concrete Structures		
<b>Justification</b>	Conduct literature review to determine methods for sealing vertical cracks on concrete. This information will be used to update current specification gaps with Department Standards relating to Specification 400.		
<b>Impact</b>	Support - The Department has had inconsistent success in sealing vertical cracks on concrete surfaces based on several large projects. This literature review will investigate how vertical cracks on concrete are sealed by other entities in the US and worldwide seeking to update the Standard Specification 400. If the Specification 400 is not updated, the Department will continue having deficient concrete that leads to corrosion on steel reinforcement bars, therefore, less durable concrete elements. Pending the results of the literature review, further research may be necessary.		
<b>Affected Offices</b>	Construction (David Wagner), Materials (Jose Armenteros), Design (Steven Nolan)		
<b>Existing Work</b>	No known research related to Florida materials.		
<b>Keywords Used In Existing Work Search</b> (Cannot leave blank)	Concrete crack; Crack sealing; Crack treatment; Thermal crack; Shrinkage crack; Contraction crack		
<b>Related Contracts (Give contract numbers)</b>	NA		
<b>Funding Request</b>	\$75,000	<b>Anticipated Duration</b>	12 months
<b>Project Manager</b>	Rodrigo Antunes	<b>Contracting Method</b>	RFP to all registered vendors
<b>Equipment</b>	NA	NA	
<b>Urgency</b>	1	The current project FIN 251688-1-52-01 I-395 Signature Bridge required crack repairs on side surfaces of the center pier footing, and it was identified that the Standard Specification does not cover the subject.	
<b>Implementability</b>	1	The results are fully implementable within one year and use minimal FDOT resources because the Standard Specification offers no direction for construction and design. The industry needs scientifically validated methods to treat vertical cracks to apply as soon as possible.	

**Project Benefits**

The potential financial benefits of implementing the research results are reducing construction and maintenance costs of bridges by expediting repairs during construction and delaying major maintenance repairs, increasing bridge service life.

<b>Project Benefits (Select all that apply and explain)</b>	<b>Quantifiable Benefits (units, dollars, etc...if applicable)</b>	<b>Methodology or Data Sources Used to Determine Quantifiable Benefits. If not applicable, please give justification of project benefits</b>
○ Materials Enhancement	Reinstate of concrete durability	Investigate methods and materials suitable for vertical crack applications to effectively seal cracks.
○ Materials Savings	NA	
○ Time Savings	NA	
○ Lives Saved/Injuries Prevented	NA	
○ Other (Explain)		

\*Comments should explain and support urgency, financial benefit, and implementability scores