TIDC Transportation Infrastructure Durability Center AT THE UNIVERSITY OF MAINE

UTC Project Information	
Project Title	High Performance Concrete with Post-Tensioning Shrinking Fibers
University	University of Vermont
Principal Investigator	Dryver Huston
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Funding Source(s) and Amounts Provided	Federal: $110,000 UVM: $110,229
Total Project Cost	$220,229
Agency ID or Contract Number	69A3551847101
Start and End Dates	1/1/19 to 5/31/21
Brief Description of Research Project	This research improves upon the technique of reinforcing concrete with dispersed fibers by having the fibers axially shrink after curing to produce a dispersed multi-axial post-tensioned state. Such reinforcing may increase the crack resistance and durability of the concrete. Preliminary benchtop testing with natural chitosan polymer fibers have confirmed the viability of the technique, where certain configurations show significant strengthening with the shrinking fibers. This research proposes to expand the knowledge base by examining larger scale chitosan samples, exploring steel and nitinol shape memory fibers that produce a similar effect, studying the underlying mechanical principles and exploring applicability to transportation structures.
Implementation of Research Outcomes and Photos	Project outputs are still in development and have not been implemented at this time. Implementation of research outcomes will be reported upon completion of the research outputs.
Impacts/Benefits of Implementation (actual, not anticipated)	None yet
Web Links • Reports • Project website	None yet