

PROJECT OVERVIEW REPORT

1. UTC Identifying Number
69A3551847102
2. Center Identifying Number
CAIT-UTC-REG57
3. Project Title
Comparative Analysis of Rapid Chloride Penetration Testing for Novel Reinforced Concrete Systems
4. Principal Investigator & Contact Information
Matthew Bandelt, Ph.D.
Assistant Professor
New Jersey Institute of Technology
323 Dr. MLK Jr. Blvd, University Heights
Newark, NJ 07102
5. Rutgers/CAIT Project Manager
Patrick Szary, Ph.D.
6. Customer Principal
Yong Zeng, Senior Engineer
Bureau of Materials
New Jersey Department of Transportation
930 Lower Ferry Rd.
Ewing Township, NJ 08628
7. Project Description
Transportation agencies have been rapidly deploying emerging concrete materials to improve the sustainability and durability of reinforced concrete infrastructure. This project will focus on the chloride penetration behavior of several novel concrete materials in comparison to baseline ordinary portland cement concrete mixtures that are representative of systems used in transportation agencies in the northeast region of the United States. The goal of this research study is to create an understanding of how novel concrete materials such as ductile concrete systems (e.g., UHPC, ECC, HyFRC) and recycled aggregate concrete behave in rapid chloride environments.
8. Implementation of Research Outcomes (or why not implemented)
The intended outcome of the project is to support transportation agencies in selecting and implementing novel concrete materials to improve durability of the transportation infrastructure.

9. Impacts/Benefits of Implementation (actual, not anticipated)
To Be Determined

10. Dates and Budget

Start date: 5/1/2021

End date: 4/30/2022

UTC (CAIT) Dollars: \$42,000

Cost Sharing: \$42,914

Total Dollars: \$84,914

11. Keywords

Concrete, durability, corrosion, durability, service life, composite materials,
deterioration, testing standards

12. Web Links (Reports and Project Website)

<https://cait.rutgers.edu/research/comparative-analysis-of-rapid-chloride-penetration-testing-for-novel-reinforced-concrete-systems/>