

Tappan Zee Bridge

Tarrytown, NY

CTLGroup was retained by Tappan Zee Constructors, LLC to perform concrete mixture development and laboratory testing, concrete durability analysis, and mass concrete analysis for the new Tappan Zee Bridge over the Hudson River. Following the results of the testing, CTLGroup was also contracted to provide service life evaluations of hardened concrete properties and thermal control recommendations.

CTLGroup developed and qualified concrete mixtures for durability specification compliance. Testing conducted included hardened air void analysis, freeze-thawing resistance, salt scaling resistance, and chloride migration coefficient to achieve the specified service life.

CTLGroup conducted an evaluation of restrained shrinkage of concrete mixtures for this project in accordance with ASTM C1581.

The evaluation included mixtures with and without shrinkage-reducing admixtures (SRA) to achieve the specified performance to mitigate cracking. Furthermore, we evaluated the unrestrained length change due to shrinkage for closure pour mixtures to identify the shrinking potential.

CTLGroup evaluated multiple concrete placements, reviewing the raw temperature data provided and comparing the temperature differences against the allowable difference, and reported whether any placement exceeded the maximum temperature limit of 35°F, or required further examination for thermal cracking.

Our team also provided assistance pertaining to concrete and construction troubleshooting, changes to specifications, and other miscellaneous consulting services.

Completed:
2018

Client:
Tappan Zee Constructors, LLC

Services Provided:
Concrete Mix Development, Concrete Durability, Mass Concrete Consulting, ASTM C1581 - Restrained Shrinkage Testing

