PROJECT DESCRIPTION

To avoid historic bridge deck problems, DOT engineers created and trialed a new HPC - High Performance Concrete - deck mix that included a relatively high dosage of synthetic fiber reinforcement as a key ingredient. The pilot project was the North-South Road separation bridge that carries Interstate Highway Route H-1 over the North-South Road on the island of Oahu, one of the fastest growing areas of Hawaii. The fiber consisted of 4.0 lbs. / cu. yd. of FORTA-FERRO® and 3.0 lbs. / cu. yd. of ECONO-MONO® which mixed easily and uniformly and resulted in a very workable mix that was easy to finish.

UPDATE

HI-DOT engineers reported an impressive 75% reduction in shrinkage and a 60% reduction in creep. Most impressive was the fact that the entire deck length was placed with no expansion joints, and subsequent inspections in 2013 reported no cracking.

KEY POINTS

• Improved Durability
• Reduce Surface Spalling
• Reduce Cracking
• Reduce Plastic and Drying Shrinkage

DETAILS

Date: April 2009
Location: Oahu, HI
Dosage: 4.0 & 3.0 lbs. / cu. yd.
Fiber: FORTA-FERRO® 2-¼", ECONO-MONO®
Owner Type: Government
Application: Slab-on-Metal-Deck

Contact us for more details