

Temperature: N/A

Reflective Cracking:

Concrete was placed in the Reflective Cracking Rig. During the placement, 12 concrete gages and 6 horizontal displacement transducers were embedded in the concrete.

The IoTech data acquisition system was fine-tuned for data collection. Sample data was collected during the concrete placement.

TenView is modified for Reflective Cracking test data and the verification is needed for the Tenview to read/display/export reflective cracking data.

In the first week of December, 2011, concrete strength tests were conducted on cylinders sampled from November's concrete slab construction. Test results indicated the averaged 28-day compressive strength was above 5000psi. Unfortunately, during the hydraulic system tune-up, Delta program errors raised and caused some minor damage of the concrete along the joint. Consequently, inter-locks were added to the hydraulic control algorithm, including actuator position and mechanical force limits. The concrete spalling were then carefully repaired (patching). In the second week, asphalt concrete was overlaid in the Reflective Cracking Rig. The 12' wide asphalt layer consisted of two 2.5" thick lifts and was edge-formed. Straight asphalt binder (PG 64-22) was applied on the heavy broom finished concrete surface and between two lifts. A total of 12 asphalt concrete strain gages were installed. One asphalt gage was damaged during vibrate compacting, but all other gages survived and responded well. Later, several thermocouples were post-construction installed at the bottom of the first and second asphalt lift for pavement temperature monitoring purposes. Once the asphalt temperature dropped to the ambient temperature, the cooling system was turned on. Based upon observations of the 2-week operation, it was concluded that the cooling system was fully functional and able to maintain the pavement (upper portion of concrete slabs and bottom lift of asphalt) temperature at around 32°F for full-scale tests. It is expected that full-scale testing will begin in mid-January 2012.