Reflective Cracking Daily Construction Notes

Date: December, 2012
Project: Reflective Cracking Indoor Phase 2

Temperature: N/A

Reflective Cracking Construction Notes:
Form work and paving for the reflective cracking project were completed in December, 2012, refer below to Figure-13 through Figure-17. The forms were used to create a two-strip test item of equal dimensions and vertical edges. United Concrete completed the formwork for the project. Glasgow Paving completed the HMA overlays for the project. SRA personnel were present while the HMA material was being batched and tested at the plant. SRA personnel confirmed the material properties were within the P-401 specifications prior to placement within the test item. Standard equipment and methods used to pave airports were followed during the placement. A neat asphalt tack coat, PG 64 –22, was used in lieu of a standard emulsified tack coat to assure proper bonding. The tack coat was hand applied to the PCC surface. The instrumentation was set by SRA personnel and monitored during the paving operation. The paving was completed using a two-lift process. Each lift was placed at 3" and compacted using a vibratory roller to a finished thickness of 2 ½". A field technician from Glasgow was on-site to verify the density of the in-situ material. After the first lift was completed, a thin layer of asphalt tack was placed on the surface in preparation for the second lift. SRA personnel set the instrumentation for the second lift, and Glasgow hand applied HMA material to protect the gages. The second lift was completed using the same methods and materials as the first lift.

Several days after the paving was completed, SRA and United Concrete personnel removed the forms and cleaned the test area.

Reflective Cracking Instrumentation Status:
The following outlines the Reflective Cracking Instrumentation status between the early December 2012 paving to the end of this reporting period.
A two-strip asphalt overlay was paved in the reflective cracking area, figures 13 through 17.

Pavement Sensors List:
Completed items:

- Completed installation of 8 dynatest asphalt gages, 4 CTL asphalt gages, and 12 thermocouples during the paving on December 4, 2012.
    - Of the 8 Dynatest asphalt gages, 3 were damaged.
    - Of the 4 CTL asphalt gages, 1 was damaged.
    - Three of the four failed asphalt gages were underneath the first layer.
    - Thermocouples were successful.

- 4 CTL asphalt gages 4 inches next to the 4 dynatest asphalt gages at the overlay bottom (see figure 1).
- After paving, the framework was removed with some difficulty. Cutting and prying was required to remove the center frame (see figure 5).

- The instrumentation wiring harness was routed between the two slabs to facilitate sensor connections (see figure 6).
- Asphalt sensor surfaces were prepped using GA-2 adhesive. More GA-2 adhesive was purchased along with M-prep Neutralizer and Conditioner for cleaning and prepping the surfaces (see figure 7).
- All 16 surface gages were then installed using the adhesive.
- All 16 crack detectors were installed using Hysol EA956 adhesive and the electrical connections were soldered in (see figure 8).
- M-Coat protective coating was used on all sensor surfaces to prevent moisture damage.
- The 16 surface gages were wired in (see figure 9).
- One surface gage, two crack detectors, and a horseshoe displacement sensor were installed on each side of the two slabs (see figure 10).
- The four horseshoe displacement sensors were installed using grey painted brackets and were wired in (see figure 11).
- All Sensor List installation was completed by December 28, 2012 and the Chiller was turned on (see figure 12).

Figure 1. Asphalt Gages underneath first layer. Dynatest gage are 6 inch from the edge & CTL gage are 10 inch from the edge.

Figure 2. Dynatest gages and thermocouples on top of the first layer.

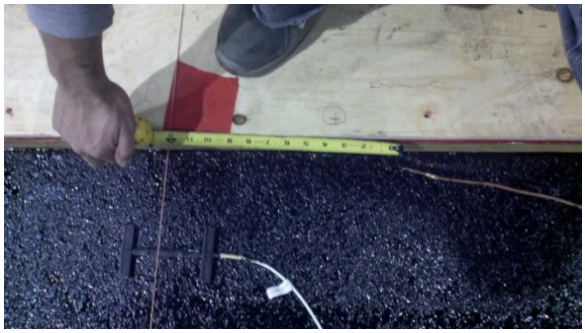

Figure 3. Thermocouple 12 inches from the joint.

Figure 4. First asphalt layer completed.

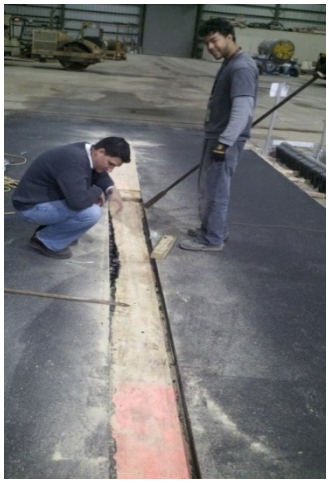

Figure 5. Removing the framework.

Figure 6. Routed wiring harness between the two slabs.

Figure 7. Surfaces prepped using GA-2 adhesive. detectors

Figure 8. Surface gages and crack installed on asphalt top surface.

Figure 9. Surface gage wiring connections.

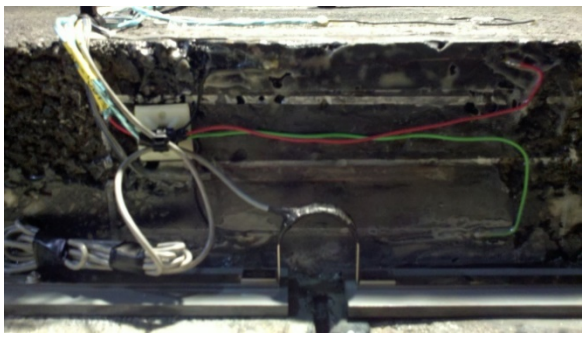

Figure10. Each slab side has one surface gage, two crack detectors, and a horseshoe displacement sensor.

Figure 11. Horseshoe sensors installed using grey brackets to measure joint displacement.

Figure 12. All Sensors List installation competed on the pavement and chiller turned on.

Figure 13. Tack Coat on Surface of PCC pavement

Figure 14. Tack coat and instrumentation for 2nd lift of HMA

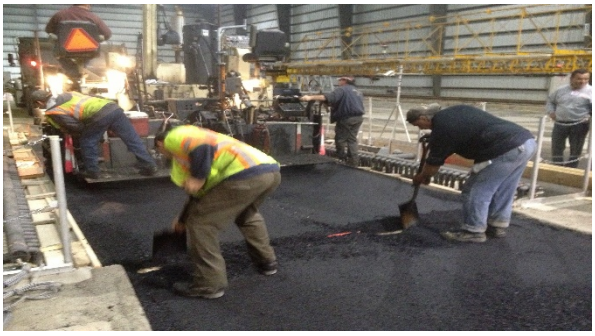

Figure 15. Paving of first lift of HMA

Figure 16. Paving of second lift HMA

Figure 17. Finished surface of Reflective Cracking