**APT SECTIONS IN UC-DAVIS**

Figure 1 and Figure 2 graphically describe the typical pavement structures to be built in UC-Davis. Regarding this project, the following is highlighted:

* Two test sections, about 48 m-long and about 4.0 m-wide, will use 270 mm granular base layer on top of clayey subgrade. In addition, 250 mm of granular recycled AC layer will be placed on top of the base layer, and 120 mm wearing surface.
* The wearing surface of each section is 15% and 50% HMA RAP. The base is the same for both sections: full-depth reclamation with no stabilizer (FDR-NS)
* The instrumentation will include strain gauges (Tokyo Sokki KM-100HAS) in both directions under each lift of the AC layer (60 mm thick); they will be located at the middle of the wheel path. Each section will have 8 strain gauges: 4 under each lift of the surface layer
* Two pressure cells will also be installed at the bottom of the recycled granular layer and two at the bottom of the AC wearing surface.
* In order to measure the deflection at different depths in the pavement structure, multidepth deflectometer will be used to complement the instrumentation response measurements.
* The load and inflation pressure that will be used during the APT is given in Table 1; the speed during testing will be 5.0 mph. 100 cycles each
* The temperature will be set at a depth of 20 mm from the surface as used by SHRP
* The traffic will be applied uni-directionally and will be performed from low to high load, and from low to high temp to avoid damage to the pavement. Damage may cause by 18 kips, so this load will be applied at the end of testing for both wheel types.
* Test at different offsets with both tires (WBT and DTA) will be also performed. The cases would be: Temperature=50C, Tire Pressure=80 and 125 psi, and load=10kip. The offsets would be 7 and 12 in (offset is the distance from the line of sensor to the center of the tire).

Table 1. Test Matrix for APT (Temperature: target temperatures 20, 35 and 50C, try to do the low temperature one at night)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Tire Type** | **Inflation Pressure (psi)** | **Wheel Loading (kips)/Half Axle** | | | | |
| NG-WBT and Dual | 80 | 6 | 8 | 10 | 14 | 18 |
| NG-WBT and Dual | 100 |
| NG-WBT and Dual | 110 |
| NG-WBT and Dual | 125 |
| Dual Only | 60/110\* |
| Dual Only | 80/110\* |

\*Indicates pressure differential in dual tires (different tire inflation pressure in each tire of the assembly).



Figure 1. Plan and profile view of pavement structure and instrumentation for the 15%-RAP-HMA test section at UC-Davis



Figure 2. Plan and profile view of pavement structure and instrumentation for the 50%-RAP-HMA test section at UC-Davis



Figure 3. Cross section of pavement structures and instrumentation for the test section at UC-Davis (Multi-depth deflectometer not shown for clarity)