



## USPS Santa Clarita PneumaSeal™ Impact Test Summary

**Situational Review:** The Santa Clarita Post Office Vehicle Maintenance Facility was achieving less than optimum tread life from vehicle tires. It was costly for the maintenance facility to prematurely replace and dispose of worn out tires. The purpose of this test was to determine the significance of the underinflation problem and determine whether PneumaSeal could effectively reduce or eliminate underinflation.

**Problem:** Underinflation was suspected as the major cause of the premature tire wear. Tire manufacturers report that a normal tire can lose one psi or more of air each month. Left unchecked, underinflation can reduce tire tread life by up to 53%.

**Primary Cause of Underinflation:** Vehicle maintenance procedures mandate that tire inflation inspection be conducted during a vehicle's semi-annual inspection. The lack of a regular tire pressure inspection and the corresponding topping off of the tires with low air pressure is a major contributor to underinflation. An unmonitored tire can lose more the six psi of air in six months. Unfortunately air maintenance programs are expensive to maintain and supervise. The lack of such a program also contributes to increase vehicle fuel consumption.

**PneumaSeal Evaluation Criteria:** PneumaSeal was installed in the front tires of two front wheel drive delivery vehicles. The front tires were considered the most vulnerable to tire wear. The PneumaSeal treated tires, the untreated rear tires and the tires on 10 randomly selected vehicles were checked for air pressure over an eight week period.

**Evaluation Results:** The test concluded that an underinflation situation existed with tires not treated with PneumaSeal. The PneumaSeal treated tires registered 50 psi (no loss of air) at the end of the eight week test. The test vehicles' untreated rear tires registered an average air loss of 8%. The randomly tested tires registered an average of 14% air loss. These results are consistent with industry porosity related air loss statistics of one psi air loss per month.

**Productivity and Economic Pay Off:** The tire protected against air loss with PneumaSeal recorded no loss of air. The results indicate that PneumaSeal treated tires should get a 33% increase in tread life. The evaluation also determined that underinflated tires were costing the vehicle maintenance facility \$96.16 per tire or \$384.64 per set of tires.

### **Additional Benefits Observed:**

1. Maintaining proper tire inflation with PneumaSeal increases the retreadability of tires by allowing more casing to be retreaded and increasing the number of retreads per casing.
2. Maintaining proper tire inflation with PneumaSeal improves vehicles fuel economy. In this test, fuel economy increased 34.5%, saving nearly \$280.00 per vehicle every 10,000 miles. (Fuel economy was calculated at \$1.50 per gallon.)
3. Protecting tire with PneumaSeal reduces vehicle downtime, wasted personnel time and flat tire repair expense. In this test, the savings was \$90.00 per flat tire.
4. PneumaSeal produces ecological savings by reducing the number of tires being disposed of and by decreasing tire roll resistance which improves fuel economy thereby reducing air pollution.