Automated Plate Load Testing Summary
Hunt Highway, Arizona

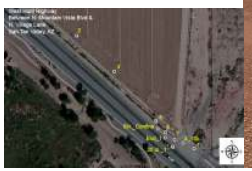
Tensar®

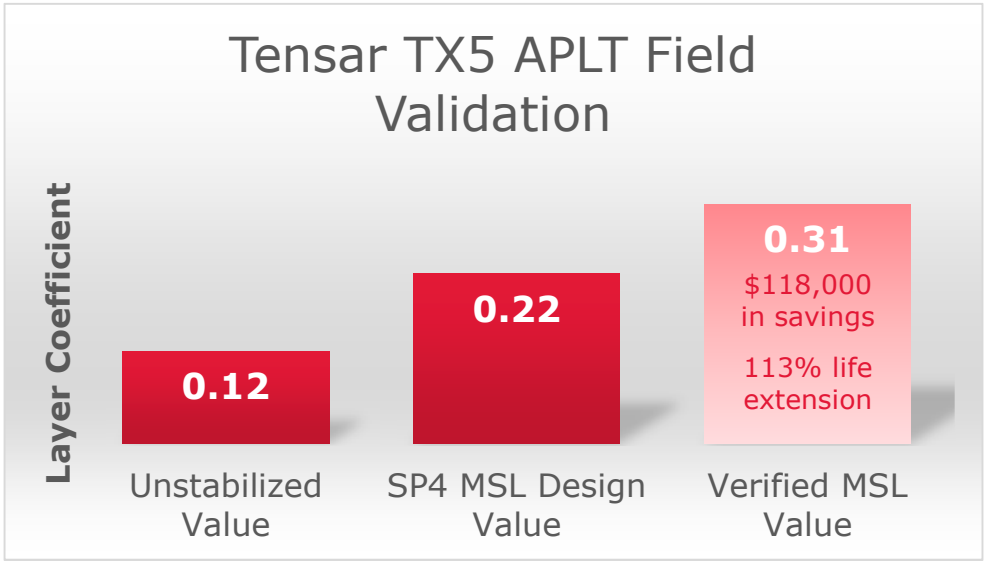
Research Organization
Ingios Geotechics, Inc.

Section Tested
6-inches of base over TX5

Testing Conducted
Mr of the mechanically stabilized base course
Mr of the subgrade
Mr composite modulus
Modulus of subgrade reaction (k)
ev1 and ev2 strain modulus testing
Resilient deflections (scaling exponent)

Mr (Ave) base	155,694 psi
Mr (Ave) subgrade	16,144 psi
Mr (Ave) composite	34,251 psi
Ev2 (top of stabilized base)	15.23 ksi
Ev2/Ev1 Ratio	1.60
K-value (stabilized)	392 pci





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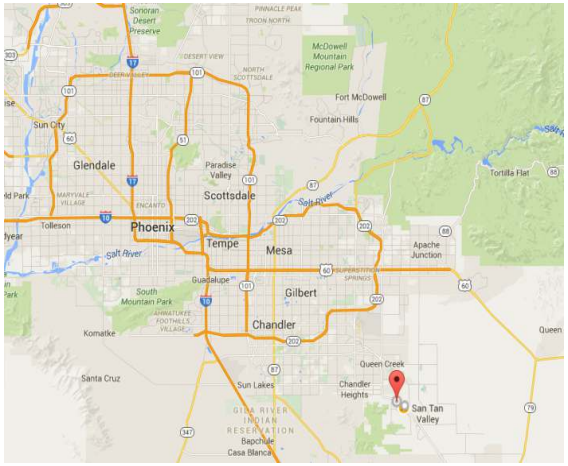

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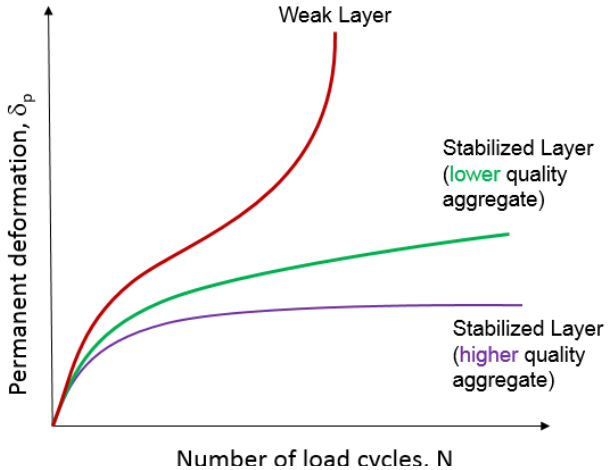

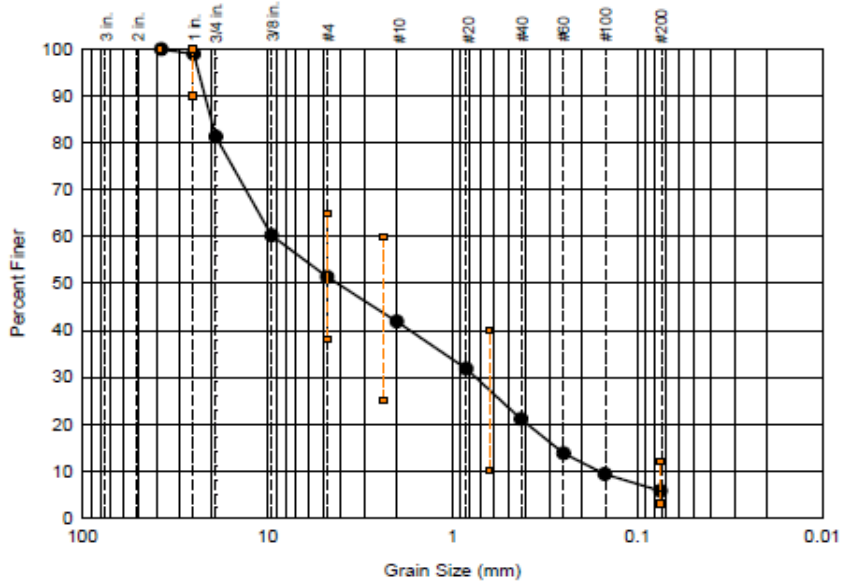

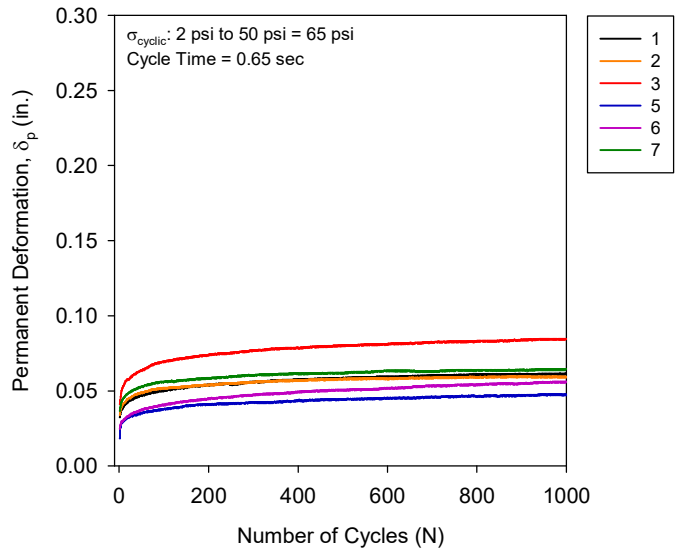

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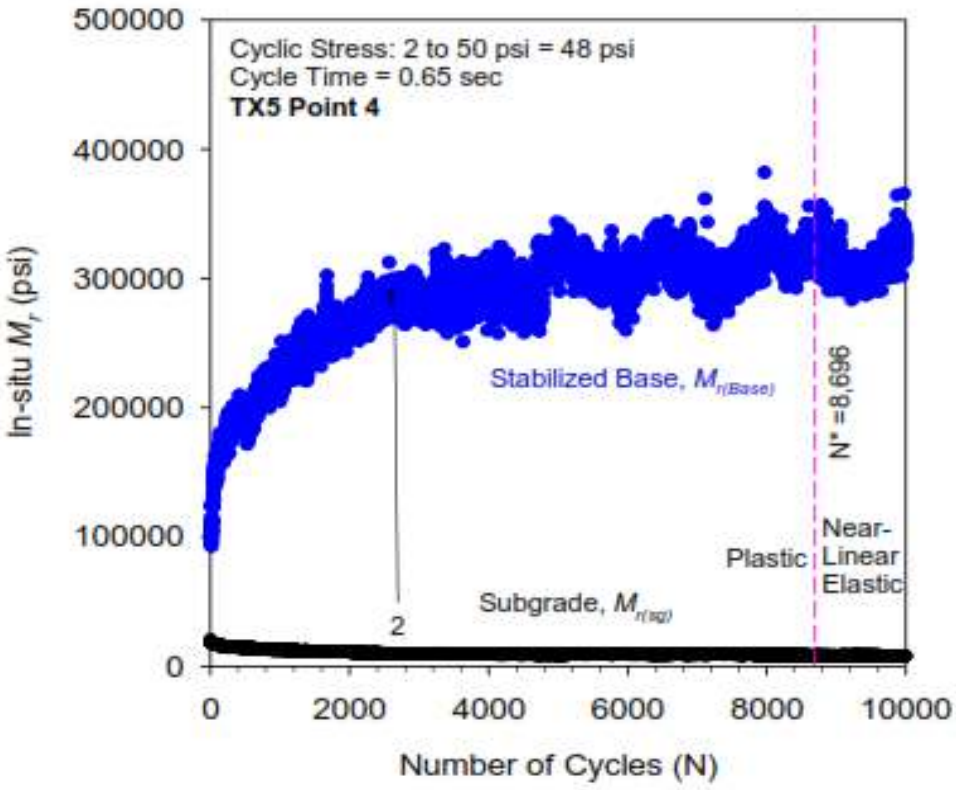
"For the 10,000 cycle test, the in-situ resilient modulus rapidly increased in the aggregate base layer for the first ~3000 cycles and then continued to increase at a slower rate. Based on a permanent deformation rate of 0.0001in./cycle the transition from plastic deformation accumulation to near-linear elastic occurs at N* = 8,696 cycles. At N*, the in-situ *Mr* was about 321,881 psi (2x higher than the average value from the 1000 cycle tests)."



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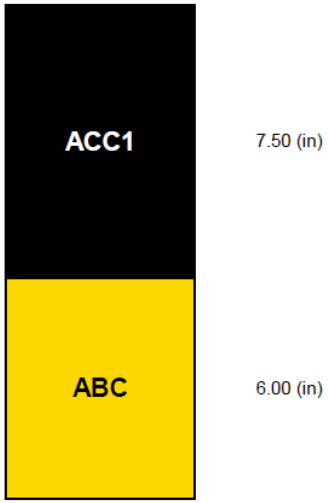
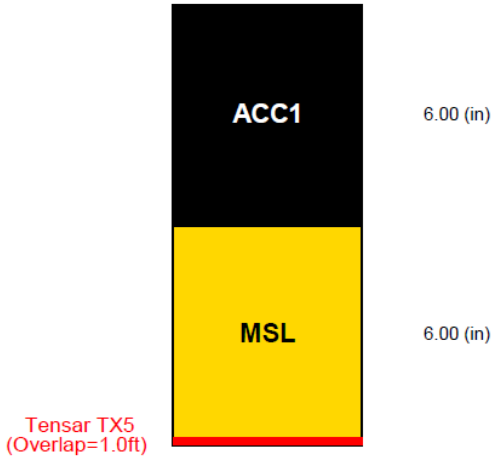
Pavement Design Options

Unstabilized Pavement



Subgrade Modulus = 15,271 (psi)
Structural Number = 3.870
Calculated Traffic (ESALs) = 8,476,000

Stabilized Pavement



Subgrade Modulus = 15,271 (psi)
Structural Number = 3.882
Calculated Traffic (ESALs) = 8,634,000

Savings >$118,000

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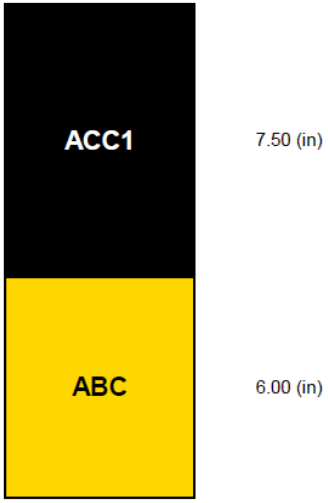
Unstabilized Pavement



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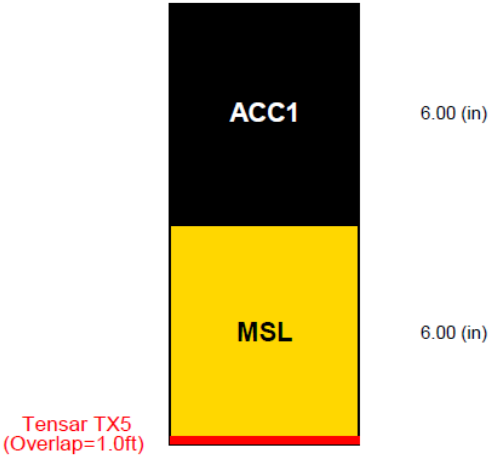

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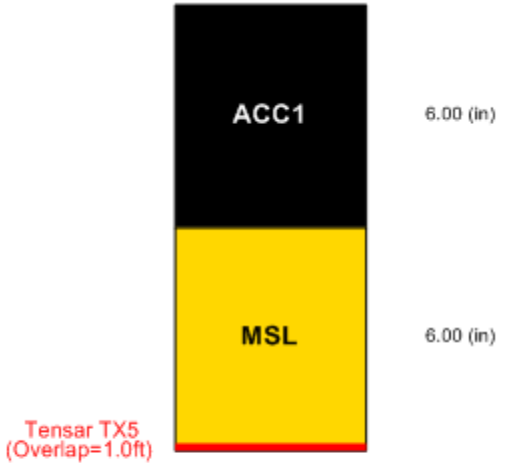
Actual Tested Values of the Stabilized Pavement



Subgrade Modulus = 15,271 (psi)
Structural Number = 4.380
Calculated Traffic (ESALs) = 18,074,000

Savings >$118,000 for both sections.
Actual APLT results showed a layer coefficient of 0.31 – providing 113% greater anticipated design life.

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Summary of Testing

- Significant improvement in structural contribution (layer coefficient) with TX5
- Savings of greater than $118,000
- Estimated 113% greater design life
- K-values, Ev1 and Ev2 values established