

Evaluation of the GeoGauge™ on NM 44

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Koch Materials

- Koch Pavement Solutions
 - Technical support for initial pavement analysis
 - Selection of treatments for pavements
 - Materials selection, application technology, and job-site support
 - Development of new paving system technologies for improved quality
 - Partner with quality contractors
 - lower life cycle costs
 - preserving pavements
 - building longer lasting roads
- Koch Performance Roads
 - 20 year warranty on NM 44 (U.S. 550)
 - ~ 121 miles between Bernalillo & Bloomfield, NM
 - Design
 - Material Selection
 - 2 Year Construction Period (27 years for Normal Contracts)

Objectives of Field Evaluation

- Evaluate GeoGauge as a tool for verification of Lime Stabilization Curing Processes:
 - Stiffness Increase vs. Time (and assumed strength gain as well)
 - Rate of Stiffness Gain
- Evaluate Potential for GeoGauge as Q.C. Tool for Compaction
- Evaluate Uniformity of Stabilized Materials
- For Comparison Purposes with Assumed Design Values
- Potential for Assuring Stabilized Subgrade Performance

Sta. 4815 Unstabilized Sandy Clay (NM 44)



Sta. 5045 Lime Stabilized Sandy Clay (1 day cure)

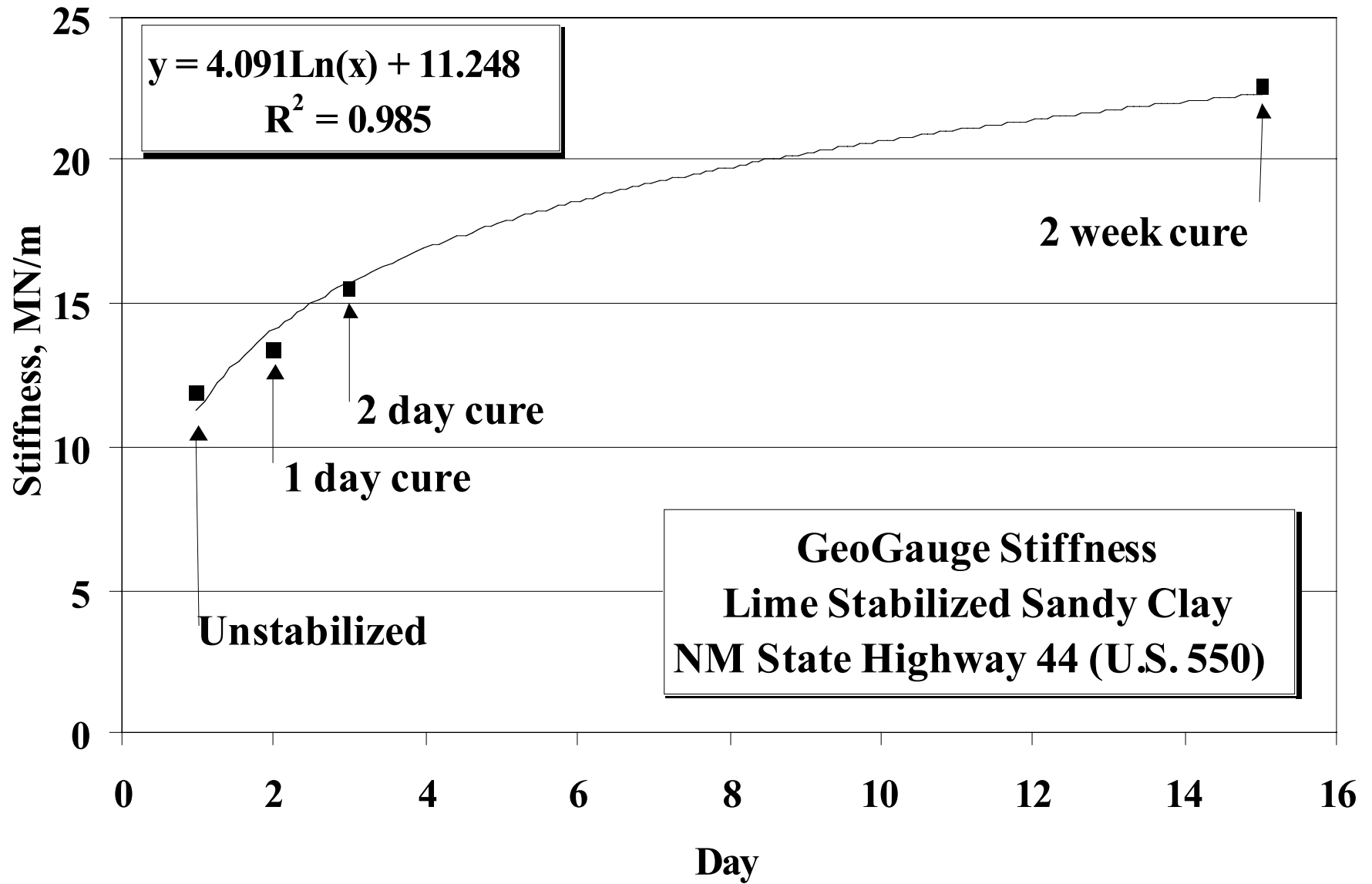


Sta. 5050 Lime Stabilized Sandy Clay (2 week cure)



Stiffness Test Results					
Lime Stabilized Sandy Clay - NM State Highway 44 (U.S. 550)					
		Stiffness (MN/m)			
Location (Sta.)	Age (day)	Mean	Std. Dev.	COV (%)	Dry Density (pcf)
4815*	0	11.9	1.7	14.1	102.3
5045	1	13.4	2.5	18.3	101.5
5045	2	15.5	2.6	16.9	101.5
5050	14	22.6	3.1	13.5	101.0
*Unstabilized					

21 Points each Station on a 10 ft by 30 ft grid



CONCLUSIONS

- GeoGauge COV = 15.7% Average for 4 Test Sections
- Increased Stiffness Over Time for Stabilized Materials
- Suggests Increase Probably Predictable
 - Field Test Sections
 - Laboratory Test Results
- Density Not Useful for Predicting Stiffness/Strength Increase

RECOMMENDATIONS

- Koch Materials
 - Implementation for Stabilized Materials
 - Laboratory Procedure
 - Field Procedure
 - Specification
 - Minimize Construction and Curing Time
 - Optimize Subgrade Quality and Construction Cost

RECOMMENDATIONS

- NMSHTD
 - ATRI Recommends Implementation for Subgrade, Base Course, and Stabilized Materials
 - Laboratory Procedures
 - Field Procedures
 - Relation Between Lab/Field Data & Structural Design Values
 - Specification Development
 - Field Trials
 - Education & Training for NMSHTD Personnel, Contractors, QC/QA Testing Agencies

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